Proceedings of the American Academy of Arts and Sciences.
Vol. XXXVIII. No. 2. — June, 1902.

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Presented May 14, 1902. Received May 15, 1902.

Dimeromyces Forficulae nov. sp.

Male individual. Receptacle consisting of three superposed cells, the upper distinguished by a well-defined black septum from a short two- to three-celled terminal appendage, the subbasal septum of which is also blackened; the subbasal cell of the receptacle producing a suberect, short-stalked, rather long and narrow antheridium; the neck relatively broad, blunt, about as long as the stalk and venter. Total length to tip of antheridium 60 μ: the antheridium, including stalk, 28–30 $\times$ 7–8 μ.

Female individual more or less tinged with purplish-brown, especially the body of the perithecium. Receptacle consisting of usually five cells obliquely superposed, with the exception of the uppermost, successively smaller from below upward, the series more or less strongly curved outward from the male; the subbasal cell bearing a simple differentiated appendage, its basal cell more or less geniculate and separated from the basally inflated, tapering, brown, five- to six-celled distal portion by a blackish constriction; the cell next above it producing the single perithecium; the next a simple cylindrical slightly tapering appendage with a black subbasal constricted septum; the terminal cell bearing terminally a short, simple, few-celled primary appendage, distinguished by a constricted black basal and a pale subbasal septum, and laterally a similar appendage distinguished by a subbasal blackish constricted septum. Perithecium rather elongate, subclavate or subfusoid, the stalk not distinguished from the body of the perithecium, and sometimes showing irregular septa; the tip often somewhat abruptly distinguished, blunt, slightly asymmetrical. Spores about 35 $\times$ 3.5 μ. Perithecia, including

stalk, 90–110 × 18–22 μ. Longest appendage 80 μ. Receptacle 60–70 μ. Total length to tip of perithecium 150–185 μ.

On all parts of *Forficula taeniata* Dohrn.; Mus. Comp. Zoöl., No. 1355; Guatemala.

Monoicomyces Oxypodae nov. sp.

Receptacle very small, the two cells subequal, the basal cell involved by the blackening of the foot and hardly distinguishable; the terminal appendage straight and tapering, its basal cell hyaline, nearly isodiametric; the subbasal cell brown, slightly inflated and twice as long; the two cells above inflated, brown, distinguished by constrictions at the dark septa. Receptacle giving rise to a branch on either side; one usually sterile, short, blunt, extending externally above the subbasal cell of the primary appendage, and wholly blackened to its base: the other fertile; consisting of a single cell which is brown, broadly blackened externally, the blackening involving its narrow base almost completely; its distal half becoming more than twice as broad, and giving rise to a single antheridium terminally and a stalked perithecium subterminally on its inner side; stalk of the antheridium brown, two-celled (?), equal in diameter to the branch cell which bears it, and like it externally blackened; the basal cells small and forming with the wall and antheridial cells a compact antheridium twice as long as broad, distally rounded and slightly sulcate; one only of the terminal cells growing out to form a rather short colorless appendage. Stalk-cell of the perithecium arising immediately below that of the antheridium on the inner side, its narrow base black and opaque, resembling a "foot," distally hyaline, broader, about as long as the antheridium; the basal cells hyaline, rather small; the perithecium faintly purplish, rather long and narrow, relatively large, the tip rather abruptly distinguished and usually slightly bent. Spores 45 × 4.5 μ. Perithecia 75–90 × 18–20 μ. Antheridia 25–35 × 107 μ, the appendage 40–50 μ. Receptacle 10 μ, its appendage 75 μ. Total length about 150–165 μ.

On the inferior tip of the abdomen of *Oxypoda* sp; Intervale, N. H., July 17, 1901. A species most nearly related to *D. furcillatus* and like that species placed only provisionally in the present genus.

Monoicomyces nigrescens nov. sp.

Receptacle minute, its basal cell hardly distinguishable above the foot, bearing distally a simple appendage the basal cell of which is hyaline, the subbasal somewhat longer than those above and deeply tinged with

blackish brown below. Fertile branches two or more, usually four, each consisting of a single cell which bears an antheridium terminally and a perithecium subterminally: the primary branches normally two, lateral and symmetrical, edged externally with blackish brown, the blackening contrasting and continuous with a similar coloration which extends to the tip of the primary antheridium: the secondary fertile branches arising, when present, between the primary and resembling the latter, except for the absence of the black discoloration; the whole group of branches forming, with their closely crowded antheridia and perithecia, a compact fan-like usually symmetrical tuft. Antheridia relatively long, suffused with smoky brown, more deeply blackish externally, the secondary ones with a more or less conspicuous foot-like blackened base; the stalk clearly two-celled, shorter than the main body; two of the distal cells growing upward to form the two unequal terminal appendages, which are smoky brown, darker about their blackened basal septa, the cells immediately below them projecting upward very slightly on either side. Perithecia furnished with variably developed stalk-cells the bases of which are blackened, but which are otherwise hyaline, as is the rest of the rather short, often stout, subconical, bluntly pointed perithecium. Perithecia 60–75 × 22–25 μ; the stalk-cell 12–55 μ. Antheridia, including stalk, ·35 μ, the appendages 35–50 μ. Total length 100–160 μ.

At the tip of the abdomen of *Calodera* sp. and of *Tachyusa* sp.; Intervale, N. H., No. 1357. The hosts frequenting fleshy fungi.

HERPOMYCES nov. gen.

Sexual organs normally separated on different individuals. Antheridia simple.

Male individual consisting of several (four) superposed cells terminated by a characteristically modified spinous or small foot-like process or by both; the basal cell attached by a small normal foot: one or more of the distal cells giving rise to short branches which may bear from one to several antheridia terminally, or become more or less copiously branched; the branchlets terminated by antheridia, or in some cases sterile. Antheridia long, flask-shaped. The subbasal cell of the receptacle sometimes producing a fertile branch as in the female individual from which are produced secondary receptacles which give rise to antheridial branches.

Female individual consisting primarily, as in the male, of several superposed cells similarly modified at the tip, and attached by a small normal

foot; the basal and subbasal cells constituting a "primary receptacle;" the latter giving rise to a variably developed fertile branch (sometimes apparently dividing to several cells each of which may produce a fertile branch) from which is developed a "secondary receptacle," or, as a result of branching, more than one. Secondary receptacles consisting of a partly double series of cells, variable in number, one or more of which may be fertile, the rest sometimes specially differentiated, or unmodified; those in contact with the host perforating the chitinous integument by means of fine haustoria. Trichogynes short filamentous. Perithecium borne on variably developed stalk-cells, the ascigerous portion including three tiers of wall-cells, more or less clearly distinguished from the distal portion, the wall-cells of which are more or less differentiated, four or five in each row. Spores minute, of the usual type, normally discharged in pairs the members of which produce male and female individuals. Asci apparently eight-spored.

The discovery of this very remarkable genus is due to Mr. Charles Bullard, who first observed it on *Ectobia* and *Periplaneta* in Cambridge. Though perhaps distantly related to *Moschomyces* it is in some respects unique, and with the exception of *Dimeromyces* is the only genus which contains species inhabiting orthopterous hosts. The peculiar cell relations of the perithecia and secondary receptacles seem unlike those of most genera, but a further description of them seems undesirable in the present connection.

Herpomyces chaetophilus nov. sp.

Male individual consisting of four superposed cells, hyaline, the distal cell terminated by a blackish projection similar to the small foot. The three distal cells, sometimes only the terminal one, usually producing slight outgrowths which bear the single, nearly erect, long, slender antheridia directly; or may separate a cell which bears one, or very rarely two such antheridia; the latter nearly as long as the four-celled individual. Total length to tips of antheridia 50–55 μ.

Female individual. Primary individual similar to the male, but stouter; terminated by a similar blackish projection. The fertile branch arising laterally from the subbasal cell, growing down in the form of a slender filament variable in length, usually of two or three cells, enlarging abruptly to form the single secondary receptacle. Secondary receptacle pale dirty brownish yellow, consisting of a vertical series of cells partly double above, simple below; the cells thick-walled, the long (transverse) axes directed obliquely upward and outward, about five to fifteen

in number, their points of contact with the host surrounded by a slightly blackened irregular foot-like haustorial margin, and giving rise to single simple, or very rarely branched, haustoria which penetrate the wall of the spine at right angles to its surface; the cells all sterile with the exception of the proximal one from which arises the solitary, nearly erect perithecium. Perithecium relatively large, rather stout; the ascigerous portion large, slightly inflated, longer than the outwardly curved distal portion, which tapers to the bluntly pointed unmodified apex; the tip bent abruptly outward. Spores 30–35 × 3 μ. Perithecia 125–185 × 35–48 μ. Total length of primary individual 35–40 μ. Secondary receptacle 35–75 × 22 μ.

On spines of legs, antennae and anal appendages of *Periplaneta* sp., Zanzibar, Africa; Mus. Comp. Zoöl. On *Periplaneta* sp., Mauritius; Mus. Comp. Zoöl., No. 1357.

Herpomyces Periplanetae nov. sp.

Very variable according to the host and the position of growth.

Male individual consisting of four superposed cells, the two upper, in simpler individuals, producing one or two antheridia which are either sessile or borne on a single stalk-cell: in more highly developed individuals the two distal cells producing short branches which may bear several antheridia directly, or on secondary branchlets, some of which appear to be occasionally sterile; the total number of antheridia sometimes six or more. Greatest length of well-developed forms, to tips of antheridia, 90 μ, of small specimens 60 μ.

Female individual, hyaline or nearly so. Primary receptacle surmounted by two or more sterile cells, the uppermost often asymmetrical, ending in a terminal spinous process and bearing the minute characteristic black projection laterally: the subbasal cell sometimes several times divided, each resultant cell apparently giving rise to a single branch from which is developed the very variable secondary receptacle. Secondary receptacle *in simple individuals growing on spines of host;* consisting of a vertical series of from four to twenty or more obliquely superposed cells, alternating to form a double row, otherwise similar to that of *H. chaetophilus* and like it producing a single erect perithecium from one of its uppermost cells: *in individuals growing on the integument of host;* consisting of a variable number of cells; certain fertile ones disposed subhorizontally on either side of the primary receptacle, the fertile cells, of which there may be from one to six, together with the male individual when present, and the bases of the perithecia,

protected by a shield or shell-like, usually very unequally bilobed cellular upgrowth, rounded or bluntly pointed above, the symmetrically curved successive cells which compose it enormously elongated transversely, their lumen scarcely wider than the intervening walls and forming a series of concentrically arranged arcs, the concavities directed downward. Perithecia one to six, commonly five in well-developed specimens, slightly divergent from the median line, long, pointed, tapering from the slightly, more or less asymmetrically inflated base; the distal portion not clearly differentiated, tapering more or less, curved, the slender upper portion bent abruptly inward toward the tip; the pointed apex bent inward, subtended externally by a terminal, slightly incurved, rather slender, bluntly pointed unicellular process, the cells of the cell row which it terminates distinctly larger than the other wall-cells; basal cells somewhat prominent. Spores $16 \times 1.5\ \mu$. Perithecia $145–220 \times 30–36\ \mu$, the process $14\ \mu$. Secondary receptacle, including protective shield, in well-developed individuals $125 \times 75\ \mu$; in small specimens $35 \times 50\ \mu$; when vertically developed without shield $35–110 \times 18\ \mu$.

On *Periplaneta Americana* Sauss. (type form), Cambridge (Mr. Bullard): Bermuda; Mus. Comp. Zoöl. On *Periplaneta Australasiae* Sauss., Bermuda. On *Periplaneta* spp., Mexico, West Indies, Panama, Brazil, Africa, South Seas, China. All Mus. Comp. Zoöl. On *Stylopyga orientalis* Scudd., Boston, Mus. Comp. Zoöl.

Herpomyces arietinus nov. sp.

Male individual consisting of four superposed cells, the basal one relatively long, the distal ones bearing two to three antheridia. Length about $29\ \mu$. Antheridia about $20\ \mu$.

Female individual hyaline. Primary receptacle surmounted by two sterile cells, the upper terminated by an erect distally mucronate appendage; the subbasal cell giving rise to two branches (or to a branch which becomes immediately furcate?) each branchlet producing a secondary receptacle. Secondary receptacles two, symmetrically paired, each consisting of a horizontal series of about twelve or more vertically elongated, subfusiform, more or less curved cells, corresponding to and external to the fertile cell which bears the primary perithecium, the external margin free, other fertile cells (of which there appears to be but one in the type) completely hidden behind it. Ascigerous portion of the perithecium relatively long, hardly inflated, tapering slightly above, where it passes into the distal portion; which is about half as long, tapers very slightly, and is terminated by an incurved, tongue-like, slender, subcylindrical

prolongation of the apex on the inner side, and by a relatively long straight erect slightly tapering subtending terminal unicellular process. Spores about 20 × 2 μ. Perithecia 100 × 22 μ, the terminal process 18 μ. Secondary receptacles, together, 55 × 18 μ.

On the antenna of a small brown wingless roach taken under stones and bark near the mouth of the Mammoth Cave, Kentucky; Mus. Comp. Zoöl., No. 1370.

Herpomyces Zanzibarinus nov. sp.

Male individual consisting of four cells, the distal one furnished with a sharp colorless terminal spine and a small blackish subterminal process, both of which become pushed to one side by the development of one, or sometimes two, sessile antheridia; the subterminal cell somewhat larger, sterile, or producing an antheridium laterally. Total length 28 × 6.5 μ. Antheridia 25 μ.

Female individual colorless. Primary receptacle surmounted by two sterile cells, the upper terminated by a sharp spinous process subtended by a blackish process, as in the male: the subbasal cell apparently divided at least once, the two (or more?) cells producing fertile branches from which, normally, two few-celled, paired, compact secondary receptacles are produced; each of which bears a single perithecium, the cells rather irregular, about five or six in number, subhorizontal in position, without characteristic modification. Ascigerous portion of the perithecium relatively stout, inflated on its inner side, almost twice as long as the distal portion, which tapers from it rather abruptly: distal portion curved inward abruptly at the pointed tip, which diverges from an erect blunt unicellular process which subtends it, at an angle of more than 90°. Perithecium, including base, to tip of terminal process, 125 × 28–32 μ; the process 10 μ long. The pair of fertile receptacles together about 30–35 × 45 μ broad (horizontally).

On the antenna of a large black wingless roach, Zanzibar, Africa; Mus. Comp. Zoöl., No. 1354.

Herpomyces forficularis nov. sp.

Male individual minute, consisting of four superposed cells, the three upper subequal, nearly round, constricted at the septa, the distal one terminated by a short bluntly pointed appendage resembling a minute foot, which is commonly turned to one side by the development laterally from the same cell of a single slender antheridium. Total length 18 × 5μ. The antheridium about 35 μ.

Female individual. Primary receptacle consisting of two superposed cells terminated by a single abruptly smaller sterile cell, which is slightly longer than broad and is terminated by a bluntly pointed appendage similar to that of the male, but larger; the subbasal cell much enlarged, somewhat inflated, the fertile branch apparently at once furcate so that two secondary receptacles are formed symmetrically placed on either side of and just below the primary receptacle. Secondary receptacles distinctly yellowish externally, consisting of a nearly horizontal series of about ten sterile cells, very narrow from the great elongation of their transverse axes which are vertical in position, and so arranged as to cover more or less completely the single fertile cell, which is subtriangular and gives rise to a solitary perithecium. Base of the perithecium nearly as broad as the secondary receptacle, forming a short stout neck: perithecium relatively large, the ascigerous portion somewhat longer than the distal part, very slightly inflated, nearly isodiametric, the base of the trichogyne persistent as a rather conspicuous hyaline projection between it and the distal part which is but slightly narrower, hardly tapering, the large lateral cells thick-walled, the rows similar on either side and terminating in large incurved tapering bluntly pointed brownish-yellow unicellular projections, which surmount the perithecium like a pair of mandibles, the inner somewhat shorter and straighter: the short, pointed apex included between their bases and bent slightly inward. Spores about $18 \times 2\ \mu$. Perithecia including base $200 \times 36\ \mu$; the terminal projections, longer, 35μ. Secondary receptacles 35×20–$35\ \mu$. Primary receptacle including sterile terminal cell $20 \times 7\ \mu$. Total length to tip of perithecium 220–250 μ.

On antennae of a wingless roach, Mauritius (?); Mus. Comp. Zoöl., No. 1353.

Herpomyces Diplopterae nov. sp.

Male individual; four-celled, the two middle cells roundish-oblong, the distal longer and subcylindrical, terminated by the usual minute blackish projection; the subterminal and subbasal cells each producing one or two nearly sessile, or short stalked, antheridia, with well-differentiated slender necks. Total length to tips of antheridia about 50 μ.

Female individual. Primary receptacle similar to male, the subterminal and subbasal cells subcylindrical, longer than broad; the fertile branch producing two symmetrically placed secondary receptacles, as in *H. forficularis*, the sterile external cells yellowish, somewhat larger and more distinct, about twelve or more in number; the series extending

externally and inferiorly to form a free buttress-like margin, much as in *H. Paranensis,* which almost wholly covers the single fertile cell. Perithecium yellowish, straight, nearly erect, the base bulging very slightly; but hardly broader than the ascigerous part, which is relatively large, long, subcylindrical, or slightly inflated; the distal part, relatively short, rather abruptly distinguished; the posterior cell row, which is external in relation to the host, more prominent, with larger thick-walled cells, the fifth from below prolonged to form a long, bluntly tipped, erect, horn-like, subterminal projection, distally curved inward above the short slightly incurved pointed subconical tip. Total length of perithecium (exclusive of base) to tip of process 150 μ; to tip 115 μ: ascigerous part 70–75 × 28–30 μ, distal part to tip 35–40 μ; the process, free part, 25–30 μ, whole cell 40–44 μ. Secondary receptacles both together 55–65 × 25 μ. Total length to tip of process 175–185 μ.

On *Diploptera dityscoides* Serv., Ascension Island, South Atlantic; Mus. Comp. Zoöl., No. 1371.

Herpomyces tricuspidatus nov. sp.

Male individual variably developed, the terminal cell rounded apiculate, but as a rule soon indistinguishable through proliferation, the simpler forms very similar to well-developed individuals of *H. Periplanetae,* the more complicated and most frequent type similar to the fertile branches of the male individual in *H. Ectobiae,* producing, through continued successive proliferation, a dense compact more or less appressed tuft of antheridia which appear to be associated with undifferentiated sterile branchlets. Antheridium long flask-shaped, hardly distinguished from the usually several celled branchlet which it terminates. Total length to tips of antheridia 75 μ.

Female individual. Primary receptacle small, surmounted by two rounded cells constricted at the septa, the distal one bearing a small sharp spine subtended by the usual minute blackish projection: the subbasal cell producing apparently a single fertile branch which divides at once, growing in opposite directions to form the somewhat irregular, and variably developed, secondary receptacles, which may creep extensively; the component cells, which are often very numerous, being vertically elongated and becoming arranged in two more or less complete rows; the inner mostly fertile, producing perithecia of which there may be twelve or rarely more; the outer becoming several times closely divided vertically, the cell-group which thus gives rise to the perithecial stalk, laterally connected with corresponding adjacent cell-groups through-

out its lower third only, the upper two thirds forming a free, or nearly free, continuation of the perithecial stalk, forming no free protective margin above, while below they develop a continuous, irregularly lobed, spreading haustorial margin in close contact with the host. Perithecia raised on a well-developed stalk, consisting of two unequal and asymmetrical cells placed side by side; that on the side toward which the tip of the perithecium is bent (anterior) attenuated below and extending higher than the posterior, which becomes narrower upward from its broad base; the stalk becoming gradually and slightly broader from below upward, and directly continued by the base of the perithecium from which it is not distinguished. Ascigerous portion of the perithecium distinguished from the base by a very slight prominence, and about as long as the stalk and base combined; becoming distally slightly broader, the two lower tiers of wall-cells separated by a slight elevation; the third wall-cell of the anterior row small, and forming a prominent elevation followed by a depression which subtends a large, erect, tapering, bluntly pointed, distally incurved spinous process formed by an outgrowth of the lowest cell in the anterior row of wall-cells of the distal portion (fourth anterior wall-cell) which extends upward higher than the tip of the perithecium, its upper two thirds forming a free spine; the lower cell of one of the corresponding lateral rows (fourth lateral wall-cells) producing a similar process, shorter, slightly sharper, curved inward distally toward the apical pore, this process always external in relation to the host and thus developed on the right or left side according as the perithecium is formed from the receptacle at the left or at the right of the original insertion toward which the anterior sides of all the perithecia are turned: the rest of the terminal portion above the bases of these outgrowths short, abruptly tapering, its outer margin vertical, slightly prominent and not distinguished from the posterior margin of the ascigerous portion, which is directly continued by it; its inner margin running abruptly inward and upward from the base of the anterior process to the small blunt tip, which is curved abruptly inward and is subtended by a nearly erect, short, sharp spinous process; the whole nearly symmetrical with the anterior process which is very slightly longer. Spores about 12 μ long. Perithecia, ascigerous portion 45–50 $\times$ 25 μ, terminal part to tip 28 μ, anterior process 30–34 μ, apical process 8 μ, stalk, including basal cells, 45–58 $\times$ 16–18 μ. Total horizontal extent of larger individuals including both receptacles 220 μ. Fertile cells below perithecial stalks 30–40 $\times$ 13–15 μ. Total height to tip of perithecial process 175–200 μ.

On *Blabera* sp. and *Epilampra* (?) sp., Panama; Mus. Comp. Zoöl., No. 1364. On *Epilampra* sp., No. 1360, St. Kitts, W. I. (type), No. 1366, Hayti. On a wingless form labelled "China?" All Mus. Comp. Zoöl., and in all cases on the antennae.

Herpomyces Paranensis nov. sp.

Male individual similar to the simpler forms of *H. tricuspidatus*, but the terminal cell distally modified to form a long slender flexuous tapering unicellular prolongation extending above the tips of the antheridia. Total length to tip of terminal prolongation 250 μ; the prolongation 185 μ. Antheridia about 60–70 μ.

Female individual. Primary receptacle very small, the distal cells rounded, the uppermost prolonged as in the male. Secondary receptacles developed on either side of the primary, the cell series apparently turning inward from either side so that the perithecia are more or less clustered (younger ones appearing behind the two primary ones), and protected by a shield-like structure external to the base of the first fertile cell, developed like a buttress, the outer and upper margins of which are free, consisting of sterile cells which are greatly elongated vertically and very narrow, similar and successively fewer-celled buttresses being formed behind the primary one in connection with each of the remaining perithecia, of which there may be from four to six. Perithecia very similar to those of the preceding species, but with the following differences: the greatly elongated fertile cell of the receptacle extends nearly to the base of the perithecium, the posterior stalk-cell extending downward beside it nearly to its base, covered by the protective shield except at its distal end, which is connected by a narrow isthmus with an abrupt short broad terminal enlargement; the anterior stalk-cell small, short, subtriangular in outline; the base of the perithecium abruptly somewhat broader, its cells protruding more or less distinctly; the ascigerous region thus somewhat clearly distinguished, especially posteriorly, relatively distinctly larger than in the preceding species, somewhat inflated; the conformation of the distal portion similar in general, but the third wall cell of the anterior row is not modified to form a prominence at the base of the anterior spiniferous cell, the upper half of which forms a free spinous process slightly incurved distally and equalled or even exceeded by the lateral spinous process: the free tip of the perithecium about twice as long relatively, slightly incurved, the erect incurved spinous process, which subtends it externally, more than twice as long as that of the preceding species and sublateral; the tip between the base of this spine and

the inner angle of the anterior spine relatively shorter and broader. Spores about $15 \times 1.6\,\mu$. Perithecium: ascigerous portion $58 \times 30\,\mu$; terminal portion to tip, $40\,\mu$; anterior process, free portion, 22–25 μ, whole cell, 50–54 μ; subterminal process, free part, $17\,\mu$; total length, 123 μ, including basal cells. Width of two outer buttresses together 85–100 μ; height of shield-like upgrowth 36–50 μ; length from insertion to base of perithecium 60–80 μ; total length from insertion to tip of perithecial spine 180–218 μ.

On antenna of a wingless roach (*? Blabera*), Para, Brazil; Mus. Comp. Zoöl., No. 1362.

Herpomyces Ectobiae nov. sp.

Male individual consisting of four superposed cells terminated by the characteristic blackish projection, the distal cells producing a dense appressed tuft of coherent antheridial branchlets and antheridia; the subbasal cell usually giving rise to a fertile branch, simple or furcate, which produces a secondary male receptacle consisting of an irregularly double straggling series of cells, some of which are sterile, while others bear short-stalked, unilateral, dense antheridial tufts similar to the primary one (which may sometimes be lacking?).

Female individual colorless. Primary receptacle as in the male, terminated by two short cells, the upper of which bears distally the characteristic blackish minute foot-like projection, the subbasal cell producing a simple or furcate fertile branch. The fertile receptacles, like those of the male, often creeping extensively, consisting of an irregularly double series of obliquely seriate cells, sterile or fertile without definite sequence, the whole plant producing sometimes twelve or even more perithecia developed as a rule in irregularly acropetal succession. Perithecia subsessile, inflated below, attenuated above, the extremity bent or sometimes slightly recurved, the apex unmodified. Spores $20 \times 2.5\,\mu$. Perithecia, including base, $80–90 \times 20\,\mu$. Total length of secondary receptacle, longer, $200–225 \times 15\,\mu$. Primary individual $22\,\mu$.

On *Ectobia Germanica* Scudd., Cambridge, Mr. Bullard. On *Ectobia* sp., Zanzibar; Mus. Comp. Zoöl., No. 1357: St. Kitts, West Indies; Mus. Comp. Zoöl., No. 1361. Although aberrant from the fact that the male develops secondary receptacles, this species corresponds exactly to the generic type in all other respects.

Corethromyces longicaulis nov. sp.

Receptacle abnormally developed, very small, the basal and subbasal cells arising almost side by side immediately above the foot; the basal cell long and narrow, strongly curved so as to become concave externally, its wall very thick, the cavity becoming almost obliterated; the distal half nearly horizontal, slightly bulging and becoming wholly deep black brown, except along its upper (in position) margin which is transparent yellowish and closely applied to the lower surface of the basal cell of the appendage, beyond which it hardly projects externally and which thus appears to arise from it; the subbasal cell larger, nearly hyaline externally, convex, bulging below, with a more or less distinct constriction below its slightly enlarged upper portion, which gives rise distally to the broad stalk-cell of the perithecium and sublaterally to that of the appendage. The appendage much reduced, nearly hyaline, consisting of three superposed cells; the basal (stalk-cell) squarish or rounded, the lower half or less of its inner margin connected with the subbasal cell of the receptacle. its subbasal cell smaller, bearing usually a single short antheridial branchlet; the upper cell still smaller, often hardly distinguishable, bearing one or two short antheridial branchlets and a short sterile terminal branch. Antheridia terminal, one to three in a series. Stalk-cell of the perithecium relatively very large, often curved, usually as large as the other parts of the plant combined, brown, slightly constricted at its insertion, nearly cylindrical, slightly and gradually broader toward and below the basal cells, which are relatively small and barely separate the cavity of the perithecium from that of the stalk-cell; body of the perithecium concolorous with the stalk-cell, slightly inflated, tapering distally almost symmetrically to the blunt tip, which is somewhat asymmetrical from the slightly greater prominence of one of the lip-cells; the series of wall-cells strongly spiral, completing as a rule somewhat more than one whole turn. Spores $30 \times 3\,\mu$. Perithecia $65 \times 20\,\mu$, the stalk-cell 90–$110 \times 12\,\mu$. Receptacle $25\,\mu$. Appendage 30–$40\,\mu$. Total length to tip of perithecium, average $200\,\mu$.

On *Stilicus angularis* Lec., at the base of the head on the upper side; Arlington, Mass., June. Sometimes associated on the same host with *C. Stilici* Thaxt.

ACOMPSOMYCES Thaxter.

The past season has yielded two additional species of this well-marked genus, the material of which is sufficiently abundant to determine with greater accuracy than was formerly possible its distinctive characters.

The appendage is very uniform in type, clearly distinguished above its basal cell: the terminal cell bearing distally a single antheridium, which is furnished with a spinous process; the subterminal cell is sterile in all cases; the cell next below producing, normally, from one to three antheridia laterally and somewhat irregularly; the antheridia being of characteristic form with large appressed venters and stout necks curved outward. Although in the single type the cavity of the perithecium appears to be, as was formerly stated, continuous with that of the stalk-cell, as in genera like *Dimorphomyces*, this is certainly not the case in the new forms described below, the basal perithecial cells of which are clearly defined. As it is highly improbable that *A. Corticariae* differs from other species in this respect, it may be assumed that the basal cells in the unique type are obscured by the abrupt curvature of the type specimen in this region.

Acompsomyces Atomariae nov. sp.

Colorless or very faintly brownish. Receptacle short, the distal cell squarish; the basal cell twice as large, narrow below, bulging beneath the base of the antheridial appendage from which it thus appears to arise terminally. Basal cell of the antheridial appendage rather long and narrow, not distinguished from the receptacle, to the distal cell of which its lower half is closely applied, while its upper half is in equally close contact with the stalk-cell of the perithecium; the rest of the appendage free, compact, slightly inflated, with evenly curved outline, faintly tinged with brown, consisting of three cells: the lower subtriangular in outline with the largest angle outward, bearing distally three closely appressed antheridia neither of which arises from its outer side; the cell next above somewhat larger, sterile, subtriangular with the largest angle external; the terminal cell smaller, separated by a horizontal septum from the terminal antheridium, the neck of which is curved inward, the spinous process conspicuous and external. Stalk-cell of the perithecium well developed, rather slender, about as long as the receptacle, the basal cells well distinguished: body of the perithecium narrower below, its inner margin nearly straight with slight constrictions at the septa, the outer bulging distinctly and more or less symmetrically; the tip distinctly but not abruptly distinguished, short, stout, slightly but rather abruptly expanded below the flat-conical apex, from the middle of which project abruptly the small short appressed prolongations of the lip-cells, forming a terminal apiculus. All the cells thick-walled. Spores very slender, $44 \times 3\,\mu$. Perithecia $36–46 \times 25–30\,\mu$, the stalk-cell $25–30 \times 10\,\mu$.

Receptacle 25 μ. Free appendage to tip of spinous process 36 × 12 μ. Total length to tip of perithecium 125–150 μ.

On elytra of *Atomaria ephippiata* Zimm., Kittery Point, Maine, and Intervale, N. H.

Acompsomyces pauperculus nov. sp.

Hyaline or nearly so. Receptacle short, somewhat bent; the distal cell very small, irregular, sharply pointed below, externally separated from the basal cell by an oblique septum; the basal cell three or four times as large, narrow below, expanded above its distal point, forming a right angle, the septum on one side applied to the base of the stalk-cell of the appendage. The latter subtriangular, its lower half in contact on the inner side with the two cells of the receptacle, its upper with the stalk-cell of the perithecium; the rest of the appendage free, relatively large, hardly inflated, its lower cell about as large as the two upper combined and bearing commonly one, sometimes three, antheridia as in *A. Atomariae;* the two cells above it nearly equal or the upper often smaller and bearing its antheridium subterminally, so that the spinous process of the latter appears to terminate the appendage, the wall distinguishing this antheridium being commonly invisible from its obliquity. Stalk-cell of the perithecium about as large as that of the appendage and similarly shaped, except that its position is reversed, separated distally from the basal cells of the perithecium by a very oblique septum: the body of the perithecium short, stout, bent asymmetrically, and considerably inflated; the inner margin straighter, the short squarish tip rather abruptly distinguished, the apex subtended by four distinct symmetrical prominences, which form a crown surrounding the four appressed prolongations of the lip-cells, which appear as a blunt, conical protuberance within it: all the cells rather thin-walled. Spores 45 × 4 μ. Perithecia 70 × 30–35 μ, the stalk-cell 12–18 × 9. Receptacle 20–30 μ. Free appendage 32–36 μ. Total length to tip of perithecium 110 μ.

On elytra, prothorax, and legs of *Atomaria* sp., Kittery Point, Maine, June.

ACALLOMYCES nov. gen.

Receptacle consisting of two superposed cells, the lower sometimes apparently obliterated or indistinguishable from the foot, the upper bearing a single perithecium and an antheridial appendage. Appendage consisting of six superposed cells, the basal cell closely associated with the receptacle and the stalk-cell of the perithecium; the terminal-cell

bearing a spine-like process and becoming converted into a simple antheridium, the subterminal-cell cutting off a cell laterally which becomes an antheridium, the remaining cells sterile. Perithecium stalked, normal in structure.

A genus of very simple structure, closely allied to *Acompsomyces*, from which it differs chiefly from the characters of its antheridial appendage.

Acallomyces Homalotae nov. sp.

Hyaline, becoming faintly tinged with straw color. Receptacle very small, the lower half becoming tinged with smoky-brown; the basal cell hardly distinguished from the foot and commonly obliterated by a thickening of the walls in this region, so that the receptacle appears to be one-celled. Basal cell of the antheridial appendage separated from the distal cell of the receptacle by a somewhat oblique septum, and nearly similar to that of the stalk-cell of the perithecium, to which it is closely united on its inner side; the subbasal cell very small, and becoming scarcely distinguishable in mature individuals; the two cells above it similar, rather distinctly differentiated, the pair forming a slight symmetrical enlargement; the subterminal cell above larger and longer than these two combined, the base of the antheridium extending its whole length; both this and the terminal antheridium above it relatively large, the necks very long, straight, or but slightly bent, and somewhat divergent. Stalk-cell of the perithecium somewhat broader than long, the basal cells small, the perithecium proper relatively large and somewhat inflated above the base, distally tapering gradually to the tip; the lip-cells forming four corresponding projections, the anterior larger and broader, the posterior narrow and bluntly pointed, subtended by a more or less well-defined hump, the two lateral usually shorter, blunt, slightly divergent, sometimes not clearly differentiated, varying in shape and position. Spores $35 \times 3.5\ \mu$. Perithecia $75–95 \times 25–32\ \mu$, the stalk-cell $10–12\ \mu$. Appendage, above basal cell to tip of terminal antheridium, $36\ \mu$. Antheridia $21–25\ \mu$. Receptacle $20–25\ \mu$. Total length to tip of perithecium $125–150\ \mu$.

On the superior surface of the abdomen of *Homalota* sp.; Intervale, N. H. Apparently very rare.

Stichomyces Stilicolus nov. sp.

Hyaline, becoming tinged with yellowish, the perithecia becoming pale amber-brown. Subbasal cell of the receptacle about twice as long as the basal cell; the stalk-cell of the perithecium and that of the appendage

symmetrically divergent, or the former lateral in position. The appendage consisting of a free, relatively long, distally somewhat enlarged basal cell, and two to four much smaller distal cells; the lower of which give rise from their upper angles to short branches bearing free antheridia, usually in pairs; the distal cells producing sterile branches which are more or less elongate, hyaline, and sparingly branched. Stalk-cell of the perithecium very large and stout, inflated or distally enlarged below the rather inconspicuous basal cells; body of the perithecium relatively small, becoming amber-brown, curved strongly inward, tapering slightly to the blunt unmodified tip. Spores 35 × 3 μ. Perithecia 60–90 × 18–28 μ, the stalk 90–100 × 20 μ. Receptacle 30–40 × 18 μ. Appendages 150–200 μ.

On the thorax prothorax and adjacent legs of *Stilicus angularis* Lec., on the right side; Arlington, Mass., June.

Although very different from the type of *Stichomyces* this species seems referable to no other genus, although it might possibly be included in *Rhizomyces*.

Rhachomyces anomalus nov. sp.

Receptacle small, tapering to the large sharply pointed foot, the basal cell relatively large, the subbasal bearing a pair of stout, bristle-like, simple, black-brown, septate, hyaline-tipped appendages distally and posteriorly; the cell above it bearing a similar pair arising close to the base of the short stalk-cell of the perithecium; the terminal portion of the receptacle consisting of one or two small appendiculate cells, anterior to the stalk-cell: the five or six appendages relatively large, appressed, together more or less completely surrounding the base of the perithecium, and sometimes extending nearly to its tip. Perithecium tinged with purplish brown or nearly hyaline, the stalk and basal cells small and concealed, the body relatively long, very slightly inflated, tapering to the blunt tip, which is bent slightly toward a large, curved, horn-like, hyaline outgrowth which, arising just below the tip, extends upward beyond the apex over which it is slightly recurved (or more rarely curved away from the tip), ending in a bluntly pointed extremity. Spores 46 × 4 μ. Perithecia 75–90 × 20–25 μ, the outgrowth 35–45 × 14 μ. The longer appendages 75 μ. Receptacle 35–45 μ. Total length to tip of perithecium 110–125 μ.

On *Conosoma pubescens* Payk. Growing appressed on the bristles which cover the abdomen near its tip., Waverly, Mass. An anomalous form placed only provisionally in the present genus.

Ceraiomyces Selinae nov. sp.

Receptacle pale dirty brownish, becoming gradually somewhat broader distally, the foot blackish brown, not clearly distinguished, the subbasal cell longer than the basal. Stalk-cell of the perithecium slightly longer than broad, the basal cells forming a hyaline neck bent above the stalk-cell and not distinguished except in color from the body of the perithecium, which is nearly straight, symmetrical, dull purplish brown, tapering gradually to the slightly asymmetrical apex; the tip hardly distinguished by a slight external elevation. Stalk-cell of the appendage more or less strongly curved, or recurved so that the appendage bends downward; the insertion-cell slightly broader than long, blackish purple below, separated by a slightly oblique septum from the much larger cell above it, from which four or five branches arise distally; the branches simple, or sparingly branched, hyaline or reddish brown, sterile or bearing antheridia. Perithecia 125–150 × 30–35 μ, the stalk-cell 22–25 μ. Receptacle 200–325 × 25–30 μ. Appendages 185–400 μ. Total length to tip of perithecium 219–490 μ.

On the prothorax of *Selina Westermanni* Mostch., India Orient. (labelled "Tranquil"), Berlin Museum, No. 976.

ECTEINOMYCES nov. gen.

Receptacle consisting of a single series of superposed cells, becoming variable in number as a result of intercalary division: bearing distally a single perithecium of normal type and an antheridial appendage. The appendage consisting of a series of superposed cells, several of which above its basal or stalk-cell, bear simple antheridia, which are separated distally by oblique septa on one or both sides, much as in the genus Compsomyces.

Ecteinomyces Trichopterophilus nov. sp.

Wholly hyaline with the exception of the typically blackened foot. Receptacle varying from a very long and slender to a comparatively short and stout form, the number of superposed cells varying in number from five to fifteen, or rarely more; the cells often hardly larger distally; the series as a whole often irregular, the successive cells irregularly unequal in length. Appendage similar to the receptacle, consisting of five or six superposed cells; the basal cell united to the stalk-cell of the perithecium; the subbasal cell sterile; two or three of the cells above it bearing one to two antheridia each, which may be replaced by sterile branches similar to those which always arise from the terminal

cells of the series, both laterally and terminally. Stalk-cell of the perithecium short, not distinguished from the basal cells; the body of the perithecium oblong or oval, tapering abruptly distally to form the slender well-distinguished tip, which tapers slightly to the blunt unmodified apex. Spores 25 × 3 μ. Perithecia 55–65 × 22–28 μ. Appendage including branches 75–100 μ. Receptacle 25–140 × 7–12 μ. Total length to tip of perithecium 100–220 μ.

On the elytra and abdomen of *Trichopteryx Haldemani* Lec., Intervale, N. H., August, 1901.

Laboulbenia acanthophora nov. sp.

Pale smoky brown. Perithecium relatively very large and elongate, the lower wall-cells forming a well-developed stalk, slightly narrower and paler than the main body, which is very long, straight, but slightly inflated, tapering slightly at the relatively short, stout, more deeply suffused tip; one of the lip-cells forming a median, terminal, erect, slightly curved and tapering, blunt-tipped, dark brown projection, the lower half broader, the whole more than twice as long as a similar second outgrowth which, arising near its base, curves outward on the right side (the perithecium being considered anterior). Basal cell of receptacle subhyaline, more than twice as long as broad, the subbasal subisodiametric, darker brown than the other cells; cells III and VI subequal, lying perpendicularly side by side, both several times longer than broad; cell IV about as long as cell III; cell V small, obliquely separated. Insertion-cell black, well defined. Outer appendage (broken) simple (?) its basal cells blackened; the branches curved outward, externally blackened below, and giving rise above to several successive branchlets. Spores 75 × 4.5 μ. Perithecium (main body) 220 × 50 μ; stalk 60 × 30 μ; terminal appendage 60 μ. Receptacle 220 × 65 μ. Appendages (broken) 150 μ. Total length to tip of perithecium 580 μ.

On the elytra of *Pericallus* sp.; Sharp Collection, No. 1202; East Indies.

Laboulbenia Bledii nov. sp.

Color uniformly pale dirty yellowish. Perithecium more than two thirds free, rather slender, tapering to the tip, which is more or less well distinguished; the lip-cells rather coarse and prominent, with a subterminal blackish shade on the inner side. Appendages divergent and free through the enlargement of cell V: the outer appendage simple, short, four- to five-celled; the basal cell of the inner appendage some-

what smaller than that of the outer, bearing a branch on either side similar to the outer appendage, the three straight, closely applied in a more or less compact group. Receptacle rather coarsely punctate, the basal cell slender below and suffused above the foot, rather short, and separated from the usually very long subbasal cell by a more or less distinct constriction; cells III, IV and VI subequal, more than half the upper margin of cell V free. Perithecia 100–125 × 35–40 μ. Receptacle 220–275 × 45 μ. Appendages about 90 μ. Total length to tip of perithecium 290–360 μ.

On elytra and abdomen of *Bledius jacobinus* Lec., California; Sharp Collection, No. 1174. A short stout form which is perhaps a variety of this species occurs on *Bledius basalis* Lec. in Florida (Henshaw Collection).

Laboulbenia Borneensis nov. sp.

General color pale dull straw yellow, transparent with brownish suffusions. Perithecium about two thirds free, rather stout and relatively small, externally convex, straight; a prominent hump, nearly horizontal above and distally broadly edged with contrasting black, protruding externally just below the narrow prominent abruptly differentiated tip, which is bent strongly inward and is wholly deep black; except the coarse, contrasting, hyaline, outwardly oblique lip-cells, which, on the inner side, are edged with black to the pore, the external black suffusion of the tip continuous with that of the hump. Receptacle relatively large, long and slender, the basal cell rather slender, hyaline below, distally concolorous with the subbasal cell which is much longer, distinctly stained with smoky brown, and more or less distinctly ridged or wrinkled; cell III twice as long as cell IV; cell V small, narrow, triangular; cell VI more than four fifths as long as cell V; cell VII roundish or squarish, and forming a rather abrupt external prominence below the base of the perithecium. Appendages appressed against the inner margin of the perithecium, the tip of which they hardly exceed: the insertion-cell thick, black, well defined, not deeply constricted; the outer appendage apparently simple, the basal cell slightly longer than broad, tinged with brownish; the inner appendage consisting of a basal cell almost similar to that of the outer, bearing two branches (possibly only one) which are in turn several times branched. Spores about 45 × 4 μ. Perithecia 100–125 × 35–50 μ (distally including hump × 48 μ). Receptacle 250–290 μ. Appendages (broken) 90 μ. Total length to tip of perithecium 350–380 μ.

On *Thyreopterus* (?), sp., S. Borneo; Dr. Sharp's Collection, No. 1201.

Laboulbenia cauliculata nov. sp.

Perithecium short and stout, straight or slightly curved, inflated more prominently on its inner side; dull olivaceous brown, translucent, or becoming opaque; the basal wall-cells forming a well-defined pale olivaceous or hyaline narrow stalk; the tip black, broad, not distinguished, except by its color; the rather coarse, but not prominent, lip-edges hyaline and outwardly oblique. Receptacle relatively short and small, the basal cell usually curved, narrow and subhyaline below, becoming opaque and punctate distally; the subbasal cell having only a small portion of its posterior margin free, cell III being subtriangular and overlapping it; cell IV nearly as broad as, and somewhat larger than cell III, separated from cell V, which may equal it in size, by a vertical or but slightly oblique septum; cells II–VI mostly translucent yellowish brown, often becoming opaque. Insertion-cell rather broad: basal cells of the appendages hardly distinguishable, the outer giving rise abruptly to usually two erect, or slightly divergent, stiff, bristle-like, curved branches, which are blackish brown, externally opaque, producing short hyaline branchlets along their hyaline inner margins: the basal cell of the inner appendage producing a branch on either side consisting of from one to two cells from which arise several branchlets similar to those of the outer appendages. Spores 58 × 5 μ. Perithecia 125–165 × 45–60 μ, including stalk (18–22 μ). Receptacle 90–100 × 35–40 μ. Appendages 125–185 μ. Total length to tip of perithecium 220–290 μ.

On *Colpocaccus Lanaiensis* var., No. 1226; *C. marginatus* Sharp, Kaui, No. 1228; on *Atelothrus depressus* Sharp, Lanai, No. 1231; *A. constrictus* Sharp, Molokai, No. 1234; *Mesothriseus Hawaiiensis* Sharp, Hawaii, No. 1238; on other numbers of the Perkins Collection of Hawaiian Carabidae as follows: Kaui, Nos. 1220, 1246–1248; Tahura, No. 1236; Molokai, No. 1250; Oahu, Nos. 1241, 1244; Maui, Nos. 1214, 1242, 1253, 1255.

Var. **prolixa** nov. var. Perithecium straight or slightly curved, large and greatly elongated, the body opaque; the neck usually elongate, hyaline or translucent. Receptacle as in the type, but usually translucent brownish yellow. Branches of the appendages usually more numerous and more slender, the two main branches of the inner often consisting of from three to four cells. Spores 70 × 5 μ. Perithecia 365–540 × 55 μ,

including the stalk (90–220 × 36 μ). Appendages 220 μ. Total length to tip of perithecium 450–670 μ.

On *Mesothriseus tricolor* Sharp, Molokai, No. 1239; *M. collaris* Sharp, No. 1240, Molokai; on No. 1235, Maui, and No. 1260, Oahu, in Perkins Collection.

Var. **spectabilis** nov. var. Perithecium large, long, tapering more or less symmetrically above and below, strongly curved (or often recurved) outward throughout its length, including the clearly distinguished hyaline neck; dark olive brown, becoming nearly opaque, the black tip slightly distinguished, the lip-edges hyaline. Receptacle as in the type. Appendages as in the type, but one or both of the primary branches of the inner appendage hyaline, contrasting, many celled, and variably elongated through continued terminal proliferation, black branchlets arising one from each successive cell and alternating on opposite sides of the primary branch, often very long, curved upward and inward so as to cross one another, when two primary branches are present, with such regularity as often to form a lattice-work pattern; the series often complicated by the production of copious slender hyaline branchlets from the upper side of the secondary branches. Perithecia, main body, 165–200 × 40–48. Total length of appendages 290–360 μ.

On Hawaiian Carabidae from Perkins Collection, No. 1261, "*Discolus caliginosus* Blkm.," Honolulu, Oahu. No. 1179, *Metromenus mutabilis* Blkm., Oahu. On Nos. 1254 and 1256, Molokai. On No. 1259 (type), Oahu.

Laboulbenia Columbiana nov. sp.

Uniform amber yellow. Perithecium straight, free, converging abruptly from the base toward the appendages at an angle of about 45°, slightly and nearly symmetrically inflated, the tip relatively broad, with darker subterminal suffusions; the lip-cells somewhat spreading, the posterior and two lateral ones forming distinct ear-like lateral horizontal prolongations. Receptacle normal, tapering to the pointed foot, the basal and subbasal cells relatively large, the latter largest, cells IV and VI subequal; cell V separated obliquely from cell III, and somewhat longer than cell IV, which is separated by a horizontal septum. Insertion-cell thick, somewhat translucent, purplish. Outer appendage simple, short; the basal cell faintly purplish, more or less abruptly convex externally, separated by a constriction and dark septum from the subbasal cell, which is also distinguished above by a dark septum, basal cell of the inner appendage smaller than that of the outer, bearing a simple

short erect branch on either side. Spores 50 × 4 μ. Perithecia 20–25 × 90–110 μ. Receptacle 150 × 30 μ. Appendages 40 μ. Total length to tip of perithecium 200–250 μ.

On bristle-like hairs on the elytra of *Anchonoderus concinnus* Reiche, Columbia; Berlin Museum, No. 1023. A single specimen 680 μ long, with a free perithecium curved outward, with only lateral lip-like projections and with appendages 300 μ in length which are otherwise exactly like those of the type, was found on the same host; but in the absence of further material it is impossible to determine whether or not it should be considered a mere variety.

Laboulbenia concinna nov. sp.

Perithecium opaque, nearly symmetrical, rather long and slender, straight, the lower half slightly inflated; tapering very gradually distally to the broad, truncate often symmetrical tip, which is barely differentiated above an inconspicuous elevation; the flat lip-edges slightly translucent brown: the basal cells forming a well distinguished short hyaline stalk, the curvature of which bends the perithecium away from the appendages at an angle of nearly 45°. Appendages forming a dense rather short slightly spreading tuft, the axis of which is coincident with that of the receptacle, copiously branched, the branchlets unilaterally disposed, rather closely septate; the septa mostly dark brown, except the very numerous paler slightly tapering extremities, which hardly reach the middle of the perithecium. Receptacle subclavate, the basal cell rather large, hyaline, narrower below; the cells above yellowish brown, inconspicuously punctate; cells III and IV bulging symmetrically and prominently below the well-defined insertion-cells; cells IV and V separated by a nearly vertical septum. Perithecia, exclusive of stalk, 15–180 × 33–45 μ, stalk 25 × 30 μ. Receptacle 150–185 × 55–65 μ. Appendages (longest) 125 μ. Total length to tip of perithecium 325–375 μ.

On upper surface of abdomen, at tip, of *Casnonia* sp., Buitenzorg, Java. On a single specimen among numerous hosts kindly communicated by Prof. H. M. Richards.

Laboulbenia corniculata nov. sp.

Hyaline becoming pale yellowish. Perithecium becoming tinged with brown, usually bent inward at the base at an angle to the axis of the perithecium, sometimes horizontal (the appendages and their insertion undergoing a corresponding change in position), relatively stout and

short, somewhat irregular in form, distally slightly inflated, with a more or less well-marked external elevation just above the base; the tip rather abruptly distinguished, relatively narrow, the apex broadly hyaline, with coarse irregularly prominent lips, the lower half black, subtended externally by a well-developed, horn-like, blunt-tipped, hyaline outgrowth, which is larger than the whole tip and slightly curved outward. Receptacle colorless or pale yellowish, the basal and subbasal cells of about the same diameter throughout, subequal, rather long and slender in contrast to the small, compact distal portion; cells III and IV subequal, or cell IV larger, the septum between them nearly horizontal; cell V triangular, relatively small and, like cell IV, slightly suffused above with brown, below the very broad, thin, clearly defined, black insertion-cell; the upper hyaline angle of which protrudes between the basal cells of the appendages. Appendages similar in type to those of *L. Galeritae*, hyaline, the outer consisting of about five to seven very obliquely superposed cells, bearing the branches distally and externally; the basal part of each branch consisting usually of two short brownish inflated or squarish cells, distinguished by constrictions and dark septa, the distal part about equal to the basal in length, or somewhat longer, often unicellular, hyaline, stained reddish in the types, very thick-walled; abruptly broader, as a rule, than the basal part; the tip bent slightly, tapering or even slightly inflated. The inner appendage similar to the outer, the basal part of the branches usually three-celled, the lowest, and sometimes that next above it, consisting of a single cell which bears terminally a single antheridium, the long neck of which is rather abruptly bent near the middle. Spores 90–110 × 7 μ. Perithecia 175–240 × 60–80 μ. The horn-like projection about 40 × 22 μ. Receptacle 325–475 μ. Greatest total length of appendages 450–600 μ.

On inferior surface of *Galerita carbonaria* Mannerh., Brazil; Berlin Museum, No. 960.

Laboulbenia Craspidophori nov. sp.

Perithecium relatively large, almost wholly free, erect, usually bent slightly inward toward the base and outward toward the tip, becoming almost opaque dark brown; the tip rather small, hardly distinguished, bent slightly outward; the lip edges pale, outwardly oblique. Receptacle usually rather slender, the basal and subbasal cells relatively large and long, faintly suffused with brown, the upper longer, separated from cell III by a narrow horizontal septum and from cell VI by a very oblique or almost vertical one; the distal portion of the receptacle

narrow, but rather abruptly distinguished, especially cells III and IV, more or less deeply suffused, becoming concolorous with the perithecium. Outer appendage long, slender, simple, or rarely distally furcate, curved outward; the basal cell of the inner appendage relatively very small, bearing a single, erect, short, one-celled branch; which, after bearing several antheridia distally, soon disappears. Spores 75 × 5 μ. Perithecia 180–210 × 48 μ. Receptacle 150–325 μ. Appendages longer, 300–375 μ. Total length to tip of perithecium 280–500 μ.

On *Craspidophorus tenuipunctatus* Laf., East Indies; British Museum, No. 592. On *Panagaeus* (*Eudema*) *Symei* Murr., Old Calabar, Africa; British Museum, No. 594. On *Microsomus* (*Eudema*) *vicinus* Murr., Gaboon, French Congo, Africa; Berlin Museum, No. 920. On *Craspidophorus* (?) sp., U. S. National Museum, Liberia, Africa, No. 8.

Laboulbenia curvata nov. sp.

Perithecium large and long, strongly curved inward throughout, rich deep red-brown, the inner half usually opaque, the outer more or less translucent or becoming opaque; the basal wall-cell forming a well-defined, short, hyaline stalk; the tip short and broad, suffused about the terminal nearly median pore. Receptacle short and stout, translucent, more or less deeply and unevenly suffused with dirty brown; the basal cell paler, or nearly hyaline below, often as long as the rest of the receptacle above it, obscurely punctate; the subbasal cell short, a very small part only of its anterior margin free; cells III and IV subequal, or cell IV larger, separated by a very oblique septum, a small portion only of the outer margin of cell IV free. Insertion-cell slightly oblique, brown or black, the suffusion involving the basal and even the subbasal cells of the appendages. Appendages similar to those of *L. perplexa*, consisting of from six to eight obliquely superposed cells, the branchlets usually much shorter than the perithecium, the two lowest cells of the branches of the inner appendage bearing distally a pair of deep brown divergent antheridia, the long slender necks curved rather abruptly distally. Spores 70–75 × 4 μ. Perithecia 325–400 × 50–70 μ, including the stalk (40–55 μ). Receptacle 185–220 × 75–90 μ. Total length to tip of perithecium 500–600 μ.

At base of anterior legs of *Galerita carbonaria* Mannerh., Brazil; Berlin Museum, No. 960: and of *Galerita* sp., Hope Coll., No. 259.

Laboulbenia dentifera nov. sp.

Perithecium relatively large, as long or longer than the receptacle, straight, erect, almost wholly free, rather dark dull brown; the outer margin distally converging rather abruptly in an almost straight line to the apex; one (the right) of the lateral lip-cells prolonged obliquely inward and upward to form a large tooth-like projection. The receptacle relatively short and stout, the basal cell longer, hyaline and contrasting, except distally, where it is involved in the general uniform dark dirty olive-brown suffusion of the rest of the receptacle, the cells of which are short and broad, punctate, hardly distinguishable. The insertion-cell thick, black, rather narrow, the basal cell of the outer appendage short and stout, bearing distally an inner and an outer branch, the basal cell of the outer bearing two branches, the black contrasting constricted base, only, of the outer persisting; the appendages otherwise hyaline, stout, tapering slightly; the basal cell of the inner appendage very small, roundish, bearing a branch on either side with single antheridia near the base. Perithecium 125 × 32 μ, the tooth-like appendage 20 μ. Receptacle 115 × 55 μ. Appendage 220 μ. Total length to tip of perithecium 240 μ.

A single specimen on the margin of the elytra of *Notiobia disposita* Bates; British Museum No. 678; Chontales, Nicaragua.

Laboulbenia Disenochi nov. sp.

Perithecium from two thirds to three quarters free, transparent, yellowish, becoming more or less irregularly and for the most part rather faintly suffused with blackish brown; the tip relatively large, black, more or less well distinguished, the black suffusion not abruptly limited and extending some distance downward externally; the lips outwardly oblique, hyaline about the pore. Receptacle rather short and stout, normal, pale yellowish, often becoming tinged with brown distally where it is rather faintly striate. Insertion-cell well defined, slightly oblique. Outer appendage consisting of an erect series of usually four hyaline cells, each of which bears externally (the upper terminally) a stiff simple branch of variable length, curved outward and upward, deeply blackened externally, the notched often broadly hyaline upper (inner) margin contrasting: the basal cell of the inner appendage bearing a branch on either side, mostly two- to three-celled, and resembling the outer appendage, except for the presence of basal antheridial branchlets on which the brown antheridia are borne terminally, usually in pairs. Spores 65 × 6 μ.

Perithecia 150–165 × 58–62 μ, sometimes smaller. Receptacle 185–220 μ. Total length 290–360 μ.

On *Disenochus fractus* Sharp, Kaui, No. 1222; *D. agonoides* Sharp, Haleakala, Hawaii, No. 1229; *D. aterrimus* Sharp, Kaui, No. 1218; *D. sulcipennis* Sharp, Kaui, No. 1219; *Brosconeyneus optatus* Sharp, Oahu, No. 1215.

Laboulbenia Dryptae nov. sp.

Perithecium usually nearly straight, often nearly symmetrical, the region corresponding to the basal wall-cells usually distinctly differentiated, hyaline or transparent, brownish, becoming darker in older individuals, concolorous with the basal and other cells below; but in general contrasting strongly, but not abruptly, with the rich dark brown of the rest of the perithecium above it, which may become opaque; the tip often bent slightly outward, not abruptly distinguished; the inner lip-cells more prominent and deeply suffused, except the edges. Receptacle rather short, punctate, becoming more or less, and rather irregularly, stained with brown, often blackish along the posterior margin up to the insertion-cell, which is thick, well defined, contrasting. The appendages rather slender; the outer nearly straight in normal individuals, simple, divergent, rigid, tapering; the basal cell more than twice as broad, subhyaline, with brownish suffusions next its deep black contrasting outer wall, the opacity sometimes involving the subbasal cell, which is similar and similarly blackened externally, as is the cell next above: the inner appendage simple, or more often once branched above the subbasal cell, divergent like the outer, brownish yellow, the antheridia borne singly from the lower cells. Perithecia 110–150 × 35–40 μ. Receptacle 135–180 μ. Longer appendages 220 μ. Total length to tip of perithecium 220–250 μ.

On *Drypta ruficollis* Dej., Natal, Africa; British Museum, No. 506.

Laboulbenia dubia nov. sp.

General form closely resembling that of *L. rigida*, the shape of the perithecium similar, except that the tip is smaller, more abruptly distinguished; the lips outwardly oblique, the blackish inner lip-cell more prominently rounded and subtended by a slight, usually distinct rounded elevation, which gives the tip a characteristic outline; the body dark translucent brown, wholly free. The receptacle very thick-walled, pale dirty yellowish brown, deeper distally. The basal cells of the appendages subequal, the outer bearing two branches radially which are simple,

or the inner once branched above its subbasal cell; the antheridia borne singly at the lower septa or on short branchlets: all the branches of both appendages relatively stout, erect, rather closely septate, about six- to eight-celled, curved slightly outward, tapering to the blunt extremities, which but slightly exceed the apex of the perithecium. Spores $55 \times 5\ \mu$. Perithecia $165–185 \times 55–65\ \mu$. Receptacle $220–325 \times 75\ \mu$. Longer appendages $220\ \mu$. Total length to tip of perithecium $440–500\ \mu$.

On the abdomen of *Philonthus politus* Linn., Alverstoke, England; British Museum, No. 363. A form which is doubtfully separated from the almost endless variations of the *L. flagellata* type and which, though sufficiently well marked in the type material, may prove a mere variety. No other closely allied form, however, is known to occur on species of *Philonthus*.

Laboulbenia Euchilae nov. sp.

Slender, nearly uniform pale dirty yellowish throughout. Perithecium relatively small with a faint brownish tinge, about four fifths free, erect, straight; the tip fairly well distinguished, the inner lip-cells large, prominent, rounded, the lip-edges outwardly oblique. Receptacle slender and long, punctate; the subbasal cell much longer than the basal, nearly isodiametric, or swollen above the basal cell and broader than the distal part of the receptacle, which is separated from its distal end by a prominent constriction; cells III and VI subequal, or cell III larger; cell V very small; cell IV longer than broad, becoming externally tinged with brownish. Insertion-cell relatively thick, free, narrow. Appendages becoming wholly dark brown, in contrast to the rest of the plant; the outer simple or once furcate above the third cell; the basal cell more than twice as long as broad; the basal cell of the inner appendage less than one half as large as that of the outer, bearing a usually simple branch on either side, which bears single antheridia near its base. Spores $60 \times 4.5\ \mu$. Perithecia $100 \times 30\ \mu$. Receptacle $220–250 \times 35–40\ \mu$. Appendages $150\ \mu$. Total length to tip of perithecium $300–350\ \mu$.

At the base of the anterior legs of *Euchila flavilabris* Dej., Brazil; Berlin Museum, No. 938.

Laboulbenia Eudaliae nov. sp.

Perithecium transparent brown, nearly straight externally, the inner margin somewhat convex; the inner lip-cells deeply suffused, contrasting, coarse, erect, prominent, the lip edges hyaline, outwardly oblique. Re-

ceptacle normal, rather short and stout, somewhat prominently rounded below the perithecium; cell III smaller than cell VI; cells IV and V broad, equal in length, prominent below the broad insertion-cell. Outer appendage consisting of from three to four mostly roundish or flattened superposed cells, constricted at the blackened septa, which become oblique by the proliferation of each cell from its inner side to form a single, usually simple, erect branch; the branches eventually stout, rather closely septate, thick-walled; the basal cell of the inner appendage half as large as that of the outer, producing one or more simple branches similar to those of the outer appendage, and short antheridial branchlets, which bear the brown, slightly curved antheridia in a rather dense group. Spores 72 × 5 μ. Perithecia 150–155 × 55 μ. Receptacle 170–220 μ. Appendages 180–225 μ. Total length to tip of perithecium 250–350 μ.

On *Eudalia latipennis* MacLeay, Port Denison, Australia. On elytra and legs; Berlin Museum, No. 952.

Laboulbenia exigua nov. sp.

Perithecium relatively very small, the upper third or less free, reddish brown, deeper than the receptacle, erect, straight, nearly symmetrical; the tip clearly and rather abruptly distinguished; the lip-cells with darker shades, distinctly spreading, especially externally, the edges hyaline, nearly horizontal. Basal and subbasal cells of the receptacle subequal, small. The insertion-cell broad, well marked. The basal cells of the appendage clearly distinguished, subequal, about as broad as long; the outer bearing a single, simple erect branch, the basal cell of which is abruptly narrower, squarish, deeper brown, the septa dark, the rest of the branch simple, obscurely septate, distally hyaline, tinged with pale brown below; the inner appendage like the outer, shorter, paler, the brownish short basal portion of the single simple branch smaller and without septa. Spores about 40 × 4 μ. Perithecia 86 × 26 μ. Receptacle 220 μ. Appendages 184–150 μ. Total length to tip of perithecium 250–290 μ.

On the inferior thorax of *Chlaenius biguttatus* Motsch., Japan; Berlin Museum, No. 923.

Laboulbenia flaccida nov. sp.

Perithecium free except at its base, brown, straight, slightly inflated below, tapering gradually to the broad blunt apex; the tip scarcely if at all distinguished, marked by darker shades; the lips coarse, not promi-

nent. Receptacle yellowish or nearly hyaline, becoming slightly tinged with brownish and faintly punctate above the basal cell, which, as well as the subbasal, is relatively large, the two subequal, usually more or less abruptly distinguished from the broader compact portion, the cells of which are relatively small, the upper half or less of cell IV free, projecting externally to the insertion cell, which is rather small and thick; deep, slightly reddish, brown, the deep suffusion continuous with a corresponding external coloration of the basal cell of the outer appendage and the three to four lower cells of the outer branch, which arises from it and which curves more or less strongly outward; the distal portion curved upward, hyaline, tapering, flaccid, each of the suffused cells giving rise distally, from the inner side, to a more or less erect, simple (or the lower sometimes furcate) hyaline branchlet, the lower cells of which are rather long and slender, inflated; the distal portion tapering, thin-walled, usually becoming flaccid; the inner branch of the appendage furcate above its erect basal cell, the branchlets divergent and similar to those of the outer branch, or short and bearing antheridia usually in pairs; the inner appendage consisting of a basal cell about as large as the outer, bearing a hyaline branch on either side which is usually furcate above its basal cell, the branchlets similar to those of the outer appendage. Spores about $40 \times 4\,\mu$. Perithecia $80–90 \times 25–30\,\mu$. Receptacle $90–125\,\mu$. Appendages $150–200\,\mu$. Total length to tip of perithecium $175–220\,\mu$.

On legs of *Casnonia subdistincta* Chaud.; British Museum, Biologia Collection, No. 704.

Laboulbenia Tachyis nov. sp.

Form slender. Perithecium tinged with brown, relatively small, narrow, erect, very slightly curved outward distally, about three quarters free, tapering slightly to the relatively broad, hardly differentiated tip; the lip-cells coarse, outwardly oblique, with hyaline edges. Receptacle slender, the basal and subbasal cells hyaline, elongate, nearly equal in length; the distal portion tinged with brown. Basal cell of the outer appendage forming a characteristically modified free papillate prominence which occupies the outer third of the insertion-cell, projecting slightly beyond it, its inner half giving rise to a single rather short branch which may bear one or two branchlets: the basal cell of the inner appendage giving rise to a small erect branch on either side. Perithecia $60 \times 16\,\mu$. Receptacle $110\,\mu$. Appendages $45\,\mu$. Total length to tip of perithecium $155\,\mu$.

On *Tachys incurvus* Say, Cambridge. On *Tachys* sp., Cocoanut Grove, Florida, December.

Laboulbenia Formicarum nov. sp.

Basal cells of the perithecium small, compact, not distinguished from the body, which is suffused by darker brown shades and tapers from near the broad base, with but slight inflation, to the well-distinguished tip; which is more or less distinctly curved outward, with subterminal blackish suffusions on both sides; the rather blunt, coarse-lipped apex outwardly oblique. Receptacle abnormal in form, very short and stout, the basal cell small hyaline, narrow below, abruptly broader distally below the subbasal cell, which is broader than it is long and bulges prominently externally, giving the plant a humpbacked habit; cell III small, broader than it is long; cell IV small, squarish, separated from cell V, which is slightly smaller, by a nearly vertical septum. Appendages normal, insertion-cell blackened, but not deeply, the outer appendage simple, the three lower cells inflated, the subbasal cylindrical and distinguished by dark septa. Spores 30 × 2.5 μ. Perithecia 50–60 × 16–18 μ. Receptacle 30–35 × 18 μ. Longest appendages 90 μ. Total length to tip of perithecium 70–80 μ.

On all parts of *Lasius Americanus* M. and of *Formica neogagates* M., Cambridge, Mass. I am much indebted to Mr. Theo. Pergande for the identification of these hosts. *Rickia Wasmanni* Cavara, a genus with compound antheridia belonging among the Peyritschiellae, is the only other form that has been found on true ants.

Laboulbenia fusiformis nov. sp.

Perithecium relatively long and slender, becoming nearly opaque and marked by scattered blackish points more conspicuous near the base, sometimes nearly obsolete, erect, or slightly divergent above the stalk, straight, subfusiform; the basal wall-cells forming a short hyaline stalk; the tip often rather abruptly differentiated, darker, often curved outward; the lips suffused, or the edges hyaline. Receptacle very long and slender; the basal cell short, nearly hyaline; the rest pale dull browish, indistinctly transversely striate-punctate; cell II very long, isodiametric throughout, except where its distal end is obliquely overlapped for a short distance by cell VI, separated by a short horizontal septum from cell III, which is much elongated and is separated from cell IV by an oblique septum, above which the receptacle shows a slight but abrupt contraction in diameter; cell IV more than twice as long as cell V.

Insertion-cell black and thick, the blackening involving the greater portion of the basal cell of the outer appendage. Appendages very similar to those of *L. perplexa*, the basal cells of the branches somewhat darker, the distal part somewhat shorter. Spores 90 × 7 μ. Perithecia 450–580 × 60–75 μ including stalk (40 μ). Receptacle 500 μ to over 1 mm. × 70–75 μ. Appendages 275–375 μ. Total length to tip of perithecium 1.65 mm.

On the inferior surface of the prothorax of *Galerita carbonaria* Mannerh., Brazil; Berlin Museum, No. 960.

Laboulbenia Hawaiiensis nov. sp.

Perithecium variously suffused with dark olive brown, sometimes transparent brownish yellow, becoming nearly opaque, about one quarter, or only the tip, free from the receptacle, rather short and stout; the tip black, often bent outward, tapering rather abruptly; the lip-edges hyaline, rather prominent and outwardly oblique. Receptacle pale reddish amber or yellowish, becoming variously suffused with dark olive brown, especially distally; the basal cell more commonly narrow and hyaline below; abruptly broader and suffused with dark olive brown below the base of cell II, which is often abruptly broader through a slight inflation in this region, and similarly suffused, the suffusions often faint; cells III to V often deeply suffused with olive brown, faintly striate; cells III and IV subequal; cell V extending more or less prominently upward along the inner margin of the perithecium which is further bordered by cells III and IV; the insertion-cell carried obliquely outward by these modifications. Basal cell of the outer appendage usually hyaline, bearing normally two branches; the basal cell of the inner hyaline, that of the outer often small and blackened, bearing two branchlets; the outer shorter, more slender, opaque (usually broken); the basal cell of the inner appendage similar to that of the outer, often protruding somewhat inward, bearing two branches like the outer, or less often laterally, that next the perithecium bearing one or more antheridial branchlets; the antheridia terminal in groups of two or more, sometimes densely clustered; the other bearing similar antheridial branchlets or more often one or more long sterile branchlets like the outer appendage; all the sterile branches usually elongated in a sweeping curve toward the perithecium, commonly rich brown or nearly opaque, sometimes hyaline, sometimes multiplied by branching close to the base. Spores 65 × 5 μ. Perithecia 90–125 × 40–55 μ. Receptacle 200–335 μ. Appendages 290–725 μ. Total length to tip of

perithecium 230–360 μ. Specimens on "*Cyclothorax*" and "*Bembidium*" smaller.

On *Atelothrus erro* Blk., Maui, No. 1230; *A. gracilis* Sharp, Lanai, No. 1232; *Disenochus sulcipennis* Sharp, Kaui, No. 1219; *Mauna frigida* Blk., Maui, No. 1221; *Colpodiscus lucipetens*, Maui, No. 1217; *Colpocaccus Hawaiiensis* Sharp, Hawaii, No. 1224; *C. Lanaiensis* Sharp, Lanai, No. 1225; *C. posticatus* Sharp, Kaui, No. 1227; *Mesothriseus muscicola* Blk., Hawaii, No. 1237; *M. tricolor* Sharp, Molokai, No. 1239; *M. alternans* Sharp, Kaui, Nos. 1220 and 1243. On the following numbers in the Perkins Collection: Kaui, Nos. 1248, 1249, 1251, 1257, 1270; Maui, Nos. 1214, 1219, 1226, 1263, 1264, 1266, 1269, 1270, 1271; Molokai, Nos. 1250, 1267, 1272, 1274; Hawaii, Nos. 1265, 1268.

Laboulbenia Helluodis nov. sp.

Perithecium becoming rich brown, free, usually somewhat broader distally, slightly inflated; the distal wall-cells forming a clearly defined, somewhat constricted, short neck; the tip rather abruptly distinguished, bent very slightly outward, opaque except the broadly hyaline or subhyaline, flat-topped lips. Basal cell of receptacle hyaline or subhyaline, inflated, broader than, and contrasting with, the opaque subbasal cell, which is of about equal length and forms a constricted region; the distal portion of the receptacle small, rather abruptly broader, subsymmetrically triangular, the external margins even; cells III, IV and VI subequal, more or less deeply suffused with brown; cells III and IV more deeply suffused externally, about half the upper margin of cell IV free and forming a distinct prominence external to the jet black insertion-cell; cell V small and roundish. Appendages very similar to those of *L. Planetis;* the outer consisting of a divergent main axis of three cells, broadly and deeply blackened externally and at the septa; the two lower bearing a single, usually simple, divergent branch distally from the inner side; the upper bearing two such branches terminally, the outer deeply suffused with blackish brown, especially toward its base, and directly continuous with the suffused portion of the main axis; the basal cell of the inner appendage half as large as that of the outer, giving rise to a rather short simple branch on either side, or often itself simple, bearing one or two solitary antheridia near its base. Spores about 85 × 5 μ. Perithecia 150–165 × 40–55 μ including the stalk (20 μ). Receptacle 185–220 × 60 μ. Longest appendages 290 μ. Total length to tip of perithecium 360 μ.

On *Helluodes Nebrioides* Nietn., Ceylon; Berlin Museum, No. 1050.

Laboulbenia Helluomorphae nov. sp.

Perithecium straight or slightly divergent, hyaline to yellowish, becoming somewhat tinged with smoky brown; the basal wall-cells forming a scarcely apparent short stalk; the blackish tip abruptly distinguished; the coarse translucent lip-edges outwardly oblique. Receptacle normal hyaline to straw-yellow, distally obscurely punctate and slightly suffused with faint brownish shades; cells III, IV and VI subequal; cell V rather large, its inner margin more than one half free, nearly vertical, the thick slightly oblique insertion-cell thus free above the base of the perithecium. Outer appendage of the *L. Galeritae* type; the basal cell large, more or less suffused; the two or three cells above it obliquely superposed, hyaline; all the cells bearing distally and externally single simple branches, the basal part consisting of two cells, becoming clear brown, constricted at the dark septa; the distal part hyaline, or more faintly brownish, distinguished by a deep brown suffusion at the base: the inner appendage consisting of a very small hyaline basal cell, giving rise on either side to a very short branch, consisting of from one to two cells; the basal one bearing an antheridial branchlet, consisting of a single cell terminated by a solitary abruptly brownish antheridium. Spores $70 \times 7\ \mu$. Perithecia $130–140 \times 35–40\ \mu$. Receptacle $220–180\ \mu$. Appendages $185–300\ \mu$. Total length to tip of perithecium $290–325\ \mu$.

On *Helluomorpha melanaria* Reiche, Ega, Amazon; British Museum, No. 527. On *Pleuracanthus brevicollis* Dej., Surinam; Berlin Museum, No. 942. On the elytra.

Laboulbenia humilis nov. sp.

Rather slender, nearly uniform dirty olivaceous. Perithecia relatively large, straight, erect, the outer margin nearly straight to the lips, or slightly convex; the tip not well distinguished, with darker shades below the rather coarse, pale, outwardly oblique lips. Basal cell of the receptacle relatively large, somewhat paler; the cells above it darker, and transversely, rather coarsely, striate-punctate; cell III separated from cell II by short horizontal septum; cell VI separated from cells II and III by oblique septa; the anterior margin of the receptacle slightly convex, the posterior strongly divergent above cell II. Insertion-cell relatively narrow and thick, the outer appendage short, simple, tapering, four to five-celled, slightly divergent above the basal cell, which is rather long, irregular and paler; the subbasal cell separated by a more or less distinctly oblique septum, where the appendage is slightly geniculate; the

inner appendage erect, simple, or the small basal cell producing two pale, short, few-celled, simple branches. Spores about 50 × 5 μ. Perithecia 100–125 × 30 μ. Receptacle about 185 μ. Appendages 60–75 μ. Total length to tip of perithecium 250–275 μ.

On the elytra of *Chlaenius monogrammus* Laf., Hong Kong; British Museum, No. 606. On *C. cyaniceps* Bates, Hong Kong; Berlin Museum, No. 925.

Laboulbenia incerta nov. sp.

Perithecium erect or slightly divergent, rather pale or rarely darker translucent dirty brown, considerably, almost symmetrically, inflated, slightly broader below; the basal wall-cells forming a very short, often almost obsolete, hyaline stalk; the tip rather abruptly distinguished, usually bent slightly outward, short, stout, wholly suffused, darker below; the apex evenly rounded as a rule; the outer lip-cells curved outward to the external pore. Receptacle normal, hyaline, or faintly yellowish; the distal portion short and broad; the basal cell relatively short; cells III and IV subequal. The insertion-cell slightly oblique, black, contrasting, the opacity usually involving a part or the whole of the basal cells of the outer and inner appendages. Appendages similar to those of *L. perplexa*, more compact, with shorter branches; outer appendage consisting of about six to eight obliquely superposed cells, the branches divergent, curved upward; the two cells of the basal part stout, clear brown, constricted at the dark septa, roundish to long-oblong; the distal part rather stout, unicellular, tapering to a blunt apex and seldom reaching beyond the tip of the perithecium; the two branches of the inner appendage similar to the outer, except that the two lowest branches consist of a single cell, its basal septum alone dark and constricted, bearing distally a single brown antheridium. Spores 95–100 × 8 μ. Perithecia 185–250 × 60 μ. Receptacle 185–290 × 70–80 μ. Appendage 200–250 μ. Total length to tip of perithecium 360–500 μ.

On the superior and inferior surface of *Galerita carbonaria* Mannerh., Brazil; Berlin Museum, No. 960.

Laboulbenia insignis nov. sp.

Perithecium free except the base, straight, nearly symmetrical, brown, translucent or transparent, paler below; the wall-cells spiral, describing about half a turn from the base to the tip; which is abruptly distinguished, nearly symmetrical, abruptly opaque below the broadly subhyaline, faintly brownish lips, which are not prominent and form a somewhat

angular-truncate or very slightly oblique apex. Distal and basal portions of the receptacle very thick-walled, punctate, abruptly distinguished; the basal part hyaline or faintly reddish brown, parallel with the perithecium; the subbasal cell larger and longer, more or less prominently and gradually constricted toward the middle; the straight anterior margin of the distal portion abruptly divergent and formed by cell VI and the secondary stalk-cell, both of which become deeply suffused with black brown, except the base of cell VI which is concolorous with the subbasal cell, from which it arises laterally and subterminally: cell III and IV subequal and separated by a slight constriction, faintly brownish or subhyaline, their margins slightly convergent toward the thick, jet black, constricted, slightly oblique insertion-cell; the inner margin of which is free from the base of the perithecium. Basal cell of the outer appendage squarish or slightly longer than broad, bearing above its outer upper angle a single opaque contrasting short branch (broken in the types but evidently bearing several branchlets); the basal cell of the inner appendage somewhat smaller, bearing a branch on either side; each branch thrice closely branched, their short basal cells, which are subhyaline or faintly reddish brown, each successively bearing two or three divergent branchlets; the series ending in branchlets of the fourth or fifth order, which are deep brown, slender, stiff (the extremities broken in the types), divergent, thirty or more in all. Spores $185 \times 6.5\ \mu$. Perithecia $290\text{–}310 \times 80\text{–}87\ \mu$. Receptacle $365\text{–}540 \times 150\ \mu$. Appendages (broken) $2207\ \mu$ or more. Total length to tip of perithecium $600\text{–}650\ \mu$.

On inferior thorax of *Thyreopterus brevicollis* Kl., Madagascar; Berlin Museum, No. 934.

Laboulbenia Japonica nov. sp.

Short and stout, unevenly suffused with smoky or faintly olive brown. Perithecium relatively very large and long, more or less distinctly curved toward the appendages; the base subhyaline, the body evenly dark, slightly olivaceous brown, scarcely inflated, tapering very slightly to the stout, evenly rounded, opaque, hardly differentiated tip; the longitudinal series of wall-cells slightly spiral, describing about one quarter of a turn or somewhat more. Receptacle relatively small, short and stout, the basal and subbasal cells hyaline, contrasting, the latter somewhat larger, separated by an oblique partition from cell III, which is small, subtriangular and deeply suffused; cell IV larger, suffused, as is cell V, which is relatively large and long-oval; cell VI deeply suffused,

extending down beside and to the base of cell II; the cells above it also suffused and more or less indistinguishable. Insertion-cell large and unmodified, bearing a group of cells as in *L. orientalis*, which give rise to three crest-like series of branches; one outer and two inner and lateral; the outer series antero-posterior, the inner ones obliquely lateral; the branches closely set, about four or five in each series, and two to four times successively branched in the plane of the series; the basal cells sometimes bearing more than two branchlets, the cells subequal, slightly inflated, the septa, except those of the distal cells, dark blackish; the whole mass curved outward, and slightly downward, forming a short dense, rather compact tuft. Spores 80 × 5 μ. Perithecia 235 × 70 μ. Receptacle 185 × 70 μ. Appendages 100–150 μ. Total length to tip of perithecium, average, 420 μ.

On anterior legs of *Brachinus* sp., Japan; Sharp Collection, No. 1188.

Laboulbenia Latonae nov. sp.

Perithecium and receptacle much as in the larger and more typical forms of *L.* "*elongata*"; the perithecium usually deep brown, nearly opaque; the receptacle often enormously developed through the elongation of cell II. The outer appendage consisting of a large, broad, subhyaline basal cell, which gives rise to two or more, often three, or rarely more, branches in a crest-like radial series, their basal cells small squarish subhyaline; producing, as a rule, a pair of greatly elongated simple deep rich brown flexuous tapering branchlets; the basal cell of the inner appendage giving rise in general to a branch on either side, one of which resembles the branches of the outer appendage, and gives rise to long slender brown branchlets; the other commonly short, and bearing one or two antheridial branchlets; the small straight antheridia borne in compact groups of two to four members. Spores 70 × 5 μ. Perithecia 175–220 × 60 μ. Longest appendages 1150 μ, the average 750 μ. Total length to tip of perithecium 325–1125 μ.

On all parts of *Latona Spinolae* Guér., Bogota; Berlin Museum, No. 834.

Laboulbenia media nov. sp.

Perithecium usually narrow, straight, erect, sometimes slightly inflated, the basal wall-cells forming a relatively long, well-distinguished, hyaline or subhyaline stalk; the basal cells vertically elongated; the ascigerous portion marked by distinct transverse blackish striations throughout, and becoming opaque or nearly so; the tip erect, the apex slightly asymmetrical, subtended by a darker shade on the inner side.

Receptacle medium to short, the basal cell hyaline, becoming dirty brownish yellow; cells III and IV deep brownish, the suffusion more or less confined to these cells or involving also cell II and other adjacent cells, the more deeply suffused parts coarsely punctate; cell III extending upward beside cell IV and distally forming a more or less well-defined external prominence, sometimes as distinct as that formed by the basal cell of the outer appendage; cells V and VI wholly or partly hyaline, becoming dirty brownish yellow. Insertion-cell small, almost wholly external to cell V, hardly distinguishable, translucent and only finally involved in the opacity of the adjacent cells. Appendages resembling those of *L. Galeritae*, the basal cell of the outer appendage large, subtriangular, forming distally and externally a rounded prominence, from the upper nearly horizontal surface of which arises the first of the oblique series of branches; the remaining cells of the appendage hyaline, successively smaller, from about six to ten in number, forming the oblique series characteristic of this type of appendage; each bearing externally a single branch; the branches relatively short, the basal cell more elongated than the subbasal, both purplish brown, slightly constricted at the dark septa; the rest of the branch shorter or not much longer than the basal part and consisting of from one to three cells, hyaline or brown below, blunt-tipped; the basal cell of the inner appendage giving rise to the characteristic series of superposed ramiferous cells on either side which are closely united to the outer appendage, the four or five lower cells of each series producing, as a rule, unicellular branchlets terminated by a pair of brown long-necked antheridia; the sterile branchlets of the upper and distal cells similar to those of the outer appendage. Spores $45 \times 4.5\ \mu$. Perithecia $180–290 \times 40–48\ \mu$, the stalk $55–125 \times 25–35\ \mu$. Receptacle $165–220\ \mu$. Appendages, greatest total length, $165–185\ \mu$. Total length to tip of perithecium $350–725\ \mu$.

On *Galerita* sp. (tips of elytra), Venezuela; Paris Museum, No. 75. On tip of abdomen, inferior, of *Galerita Lecontei* Dej.; British Museum, No. 521; Costa Rica.

Laboulbenia Megalonychi nov. sp.

Hyaline, becoming very faintly tinged with yellowish brown. Perithecium about one half or more free, slightly divergent, short, stout, tapering slightly from the broad basal half to the tip; which is, as a rule, bent abruptly inward, rarely outward, or erect, rather small and well-distinguished by its long external contrasting broadly blackened

margin, and by a shorter broadly blackened area below the small, prominently rounded inner lips; the lip-edges horizontal, or nearly so. Receptacle rather long and slender; cells I and II of nearly equal diameter, the latter large; while between it and cell III and VI the receptacle may be abruptly and strongly twisted; cells III and VI subequal, the former higher; cell IV slightly smaller; cell V relatively large, the inner half or less of its inner margin free between the perithecium and the broad, thick, black, contrasting insertion-cell. Outer appendage consisting of three superposed, distinctly brown, successively smaller cells, each nearly twice as long as broad; each of the two lower producing distally from its inner side a simple hyaline abruptly erect branch, the terminal one bearing two such branches distally. Basal cell of the inner appendage half as large as that of the outer, bearing on each side a branch which bears one or more branchlets and, bending across the outer appendage, is often characteristically recurved beyond it. Spores 58 × 5 μ. Perithecia 100–125 × 40–50 μ. Receptacle 275–360 μ. Appendages 185 μ. Total length to tip of perithecium 300–435 μ.

On the right inferior prothorax of *Megalonychus patrobioides* Chincoxo, E. Africa; Berlin Museum, No. 1037. On *M. Angolensis* Harold, No. 1039.

Laboulbenia notata nov. sp.

Perithecium straight, erect, hardly more than the tip free, almost or quite opaque distally, paler below; covered with scattered wart-like protuberances; the tip abruptly distinguished, opaque, separated from the body of the perithecium by a subhyaline zone; the apex broadly hyaline, truncate, somewhat angular. Receptacle elongate throughout; the basal cell relatively small, dark brown, somewhat contrasting, the rest pale brownish yellow to dark brown; distally more or less conspicuously marked by scattered brown warts; cell VI very long and slender, overlapping cell II for some distance, the cells above it also unusually elongate; cell III very long and slender, separated from cell II by a narrow horizontal septum; cell V relatively small. Insertion-cell somewhat oblique, thick, black, not abruptly narrower than the cells below it. Outer appendage simple, short, the basal cell several times longer than broad, the remainder more slender, brown, contrasting with the basal cell. Inner appendage consisting of a basal cell more than half as long as that of the outer, bearing distally on either side a short simple branch similar to the outer appendage but paler. Perithecia 271 × 55 μ.

Receptacle 1100 × 75 μ. Appendages about 185 μ. Total length to tip of perithecium 1150 μ.

A single mature specimen on *Thyreopterus armatus* Cast., Madagascar; Berlin Museum, No. 933.

Laboulbenia obliquata nov. sp.

Color pale amber yellow. Perithecium almost wholly free, distally bent abruptly outward or almost recurved; the base slightly inflated; tapering somewhat, distally, to the apex; the tip hardly distinguished, irregularly bent or twisted; the asymmetrical lip-cells forming irregular projections, the two inner subtended by unequal dark patches. Subbasal cell of the receptacle somewhat longer than the basal, nearly as broad as the distal portion of the receptacle; cells III and VI subequal; cell IV subtriangular; cell V broad and short, carrying the thick contrasting black insertion-cell out free from the perithecium. Outer appendage simple (or distally branched?), slightly divergent; the basal cell somewhat longer than broad, its basal third or more obliquely involved by the opacity of the insertion-cell: the basal cell of the inner appendage similar to that of the outer, without suffusion, bearing a short branch on either side, each of which may bear several branchlets. Spores 45 × 3.5 μ. Perithecia 165–170 × 40 μ. Receptacle 185–200 × 45 μ. Total length to tip of perithecium 325–360 μ.

On elytra of *Coptodera gagatina* Dej., Brazil; Berlin Museum, No. 978.

Laboulbenia Oedichiri nov. sp.

Tinged with smoky brown. Perithecia falcate, strongly bent toward the appendages, pale smoky brown, tapering symmetrically, or nearly so, to the base and apex; the basal cells forming a short narrow hyaline stalk; the tip not differentiated, suffused with deep blackish brown, except the pale or hyaline blunt apex, the outer lips most prominent. Receptacle more or less distinctly punctate, relatively long and of nearly equal diameter throughout, often slightly geniculate through an enlargement of the basal cell, which is relatively very large just below the subbasal cell, which is smaller and separated by a more or less oblique septum; cell III relatively small, distally more prominent on the inner side; cells IV and V very small, nearly equal; cells III and VI subequal. The insertion-cell small, rather thick, wholly free and separated from the stalk of the perithecium by about half the width of cell V. The basal cell of the outer appendage larger, sometimes inflated, bearing

distally, as a rule, one terminal and two lateral branches which are usually simple, distally hyaline, somewhat constricted at the septa, hardly reaching to the tip of the perithecium; basal cell of the inner appendage very small, circular in outline, bearing apparently three branches like the outer. Spores 55 × 5.5 μ. Perithecia 125 × 32 μ. Receptacle 150 × 30 μ. Appendages about 90 μ. Total length to tip of perithecium about 250 μ.

On the elytra and upper surface of the abdomen of *Oedichirus* nov. sp.; Sharp Collection, No. 1154; Rio de Janeiro, Brazil.

Laboulbenia pallida nov. sp.

Hyaline, becoming faintly suffused with yellowish brown. Perithecium one half or less free, concolorous or slightly darker, stout, erect; the tip small, usually well distinguished, bent outward; the lip-cells outwardly oblique, the inner much more prominent, rounded distally, wholly suffused, except the edges, with dark distinctly reddish brown. Receptacle normal, or often abnormally septate, more commonly as a result of one or two distal divisions of cell V. Insertion-cell broad, reddish brown, transparent but contrasting, irregular in form, often oblique in position, being carried out free from the base of the perithecium from which it is separated by the partly free upper margin of cell V, sometimes once divided vertically; an external distinct similar accessory insertion-cell, bearing a single appendage and standing in direct relation to one of the subdivisions of cell V is rarely present. The appendages hyaline, in general normal, the outer basal cell twice or more than twice as large as the inner, bearing usually two branches which may be once branched, one of them sometimes an antheridial branch; the basal cell of the inner appendage producing usually a branch on either side, which may bear only short antheridial branchlets or longer simple sterile ones. Antheridia relatively large, stout, single or in pairs. Spores 75 × 6 μ. Perithecia 125–150 × 60–70 μ. Receptacle 220–300 μ. Longer appendages 150 μ. Total length to tip of perithecium 290–380 μ.

On elytron of *Clivina fasciata* Putz., St. Geronima, Guatemala; British Museum, No. 674. On *C. dilutipennis* Putz., Mexico; British Museum, No. 675.

Laboulbenia perplexa nov. sp.

Perithecium very large and long, nearly twice as long as the receptacle, dull translucent olive brown, or becoming blackish brown, straight,

usually erect, nearly isodiametric, or often subclavate, tapering slightly below to a short rather narrow hyaline contrasting stalk formed by the basal wall-cells; the subbasal wall-cells slightly spiral, making from one quarter to one half a turn; the tip short, blunt, blackish, generally not well distinguished, sometimes bent rather abrutly inward. Receptacle short, the basal cell nearly hyaline, somewhat elongate, the rest of the receptacle hardly exceeding it in length, dirty olive brown, becoming more deeply suffused with brown or blackish brown and somewhat mottled; cell II small, separated from cells III and VI by very oblique septa, its lower third or fourth, only, free; cells II, III, VI and often IV not differing greatly in size, their inner angles often converging to a common point at about the centre of the distal portion of the receptacle; cell II triangular or subtriangular, extending upward to a point just below the insertion-cell, and downward nearly to the base of cell II; cell V but slightly smaller than cell IV. Insertion-cell slightly oblique, well defined, rather thick, broad, black. Appendages corresponding in type to those of *L. Galeritae*, hyaline or the lower cells becoming suffused more or less, but not deeply, with brown; the outer and inner free above the base; the outer consisting of from six to sometimes ten or more obliquely superposed cells each of which bears externally a simple branch consisting of a two-celled basal part, the cells slightly longer than broad, constricted at the dark septa, clear brown; the distal part long, becoming slender, flexuous and hyaline toward its extremity, which may reach, or even exceed, the tip of the perithecium. The basal cell of the inner appendage producing a free branch on either side similar to the outer appendage, and bearing similar branchlets; except that the lowest, and usually the next above it, consist of single cells bearing terminally single brownish, slightly curved antheridia. Spores $90 \times 7\,\mu$. Perithecia $290\text{–}360 \times 50\text{–}60\,\mu$, including the stalk ($40\,\mu$). Receptacle $220 \times 60\text{–}70\,\mu$. Appendages including branches $200\text{–}360\,\mu$. Total length to tip of perithecium, average, $500\,\mu$.

On the elytra and prothorax of *Galerita carbonaria* Mannerh., Brazil; Berlin Museum, No. 960. Allied to *L. incerta* and *L. fusiformis*.

Laboulbenia Planetis nov. sp.

Perithecium large and stout, clear transparent brown, except the subhyaline base, which is separated by a more or less clean-cut line of demarcation; the wall-cells with a slightly spiral twist, the tip abruptly distinguished, symmetrical or nearly so, black, except the evenly rounded subhyaline symmetrical lip-edges. Receptacle rather slender, subhyaline

with pale brownish shades; cell II several times as long as the basal cell; cell IV bulging rather prominently externally and more deeply suffused with brown. The insertion-cell deep black, broad, thick. The appendages erect, their branches curved toward the perithecium: outer appendage normally consisting of a main axis of three superposed cells, externally broadly blackened, the blackening involving the septa and adjacent external portions of the cells; the distal cell bearing three branches; an outer and an inner simple, and a median one, once branched, the outer deeply suffused about its base, which forms a direct continuation of the suffused external area of the main axis; the remaining cells each producing a simple branch distally on its inner side; all the branches long, slender, distally thin-walled and hyaline, curved toward the perithecium, the lower somewhat constricted, and more or less deeply suffused at the lower septa: basal cell of the inner appendage half as large as that of the outer, bearing a branch on either side, from the basal cells of which arise often two branchlets, similar to those of the outer appendage. Spores $6.5 \times 5\,\mu$. Perithecia $155–165 \times 55–60\,\mu$. Receptacle $290\,\mu$. Appendages $360–435\,\mu$. Total length to tip of perithecium $400–425\,\mu$.

On the thorax of *Planetes bimaculatus* MacLeay, Java; Berlin Museum, No. 1047.

Laboulbenia Platyprosopi nov. sp.

Uniform transparent pale reddish amber, the cell-walls very thick. Perithecium straight, wholly or nearly free, erect, the margins slightly convex; of nearly equal diameter throughout to the rather abruptly differentiated short erect blackish tip; the hyaline lip-edges outwardly oblique: the base sometimes abruptly broader than the ascigerous portion. Cells I–VI of the receptacle not differing very greatly in length, except cell V, which is relatively large; cells III and VI paired; cell IV prominent externally below the thin contrasting distinctly reddish insertion-cell. The appendages quite hyaline, the basal cell of the outer several times larger than that of the inner, and bearing two to four branches in an antero-posterior series; the basal cells of which usually bear each a pair of branchlets in the same plane: the small basal cell of the inner appendage producing a branch on either side bearing branchlets similar to those of the outer appendage; the antheridia crowded on special branchlets, curved, hyaline, small and closely appressed. Spores about $5.5 \times 5\,\mu$. Perithecia $150–185 \times 36–45\,\mu$. Receptacle 150–220

× 60–70 μ. Appendages, longest, 360 μ. Total length to tip of perithecium, 275–350 μ.

On the elytra and abdomen of *Platyprosopus Beduinus* Nordm.; Berlin Museum, No. 810; Nubia.

Laboulbenia producta nov. sp.

Perithecium faintly tinged with pale dirty brown, rather long and slender, nearly erect, free except the rather narrow subhyaline base; the lips somewhat prominent, outwardly oblique, the inner subtended by a dark suffusion. Receptacle tapering to a slender pointed base, the basal cell hyaline, becoming faintly tinged with dirty brownish, contrasting with the opaque subbasal cell which is less than twice as long; cells III and VI subequal, nearly opaque, reddish brown; cell IV nearly opaque, continued upward to form a free blunt well-defined prominence which projects beside and slightly beyond the basal cell of the appendage; cell V relatively very large, extending to the base of cell IV, wholly pale dirty brown like the perithecium, contrasting. Insertion-cell relatively large, slightly oblique inward, resting below on cell V and laterally and obliquely on cell IV. Basal cells of the appendages nearly equal, subisodiametric, the outer bearing an outer and an inner simple hyaline branch distally, the basal cells of which, especially the inner one, are more or less inflated, roundish, with dark septa, and tinged with dirty brown; the basal cell of the inner appendage bearing a branch on either side similar to those of the outer, the branches hardly extending to the tip of the perithecium. Spores 55 × 4 μ. Perithecium 90–100 × 25 μ. Receptacle 110 μ to insertion-cell, the projection above 10–12 μ. Total length to tip of perithecium 220 μ.

Growing appressed on the bristle-like hairs on the elytra of *Anchonoderus concinnus* Dej., Columbia; Berlin Museum, No. 1023.

Laboulbenia proliferans, Thaxter.

This species, which is very widely distributed throughout the warmer regions of the eastern hemisphere, presents very numerous variations in form, size, color, degree of proliferation and character of appendages, among which the following seem sufficiently constant to warrant a varietal name:

Var. Liberiana Thaxter. Cell V constantly once proliferous, the accessory appendage simple, distinguished by a thick, jet black base. On *Eudema* sp., Liberia. On *E. arcuatocolle* Murr., Old Calabar,

Africa; British Museum, No. 591. On *Eudema* sp., Congo, Africa; Paris, Nos. 84 and 152.

Var. **atrata** nov. var. Cell V two to five times proliferous, the accessory appendages distinguished by thick black bases, simple or once to twice divergently branched. On *Chlaenius Dohrini* Bert., Tropical E. Africa; Berlin Museum, No. 226. On *Euchlaenius trochantericus* Kolbe, Njam Njam, Semnio, Africa; Berlin Museum, No. 921. On *Craspedophorus nucata* Harold, "Regne Lugna"? Africa; Berlin Museum, No. 908. On *C. Westermanni* Laf., Togo, Africa; Berlin Museum, No. 909. On *Rhopalomelus angusticollis* Boh., Port Natal, Africa; British Museum, No. 630. On *Rhopalomelus* sp., Africa; Hope Collection, No. 311.

Var. **cincta** nov. var. Like var. *atrata*, the perithecium borne on a black base, differentiated in a manner similar to that of the typical insertion-cells of the genus. On *Eudema sinuaticolle* Laf., Lagos, Guinea; British Museum, No. 590. On *E. grossum* Hope, Old Calabar, Africa; British Museum, No. 587. On *Episcosomus* (*Eudema*) *grossus* Hope, Africa; Paris Museum, No. 81. On *Craspedophorus adaequatus* Kolbe, Bismarkdorf, Togo, Africa; Berlin Museum, No. 919, and Kamerun, Africa; Berlin Museum, No. 912. On *C. Congoanus* Kolbe, Kimpoko, Congo, Africa; Berlin Museum, No. 907. On *C. Preusii* Kolbe; Barumba Station, Kamerun, Africa; Berlin Museum, No. 910. On *C.* (*Eudema*) *Strachani* Hope, Togo, Africa; Berlin Museum, No. 913.

Var. **divaricata** nov. var. Cell V once proliferous or sometimes normal without proliferation, the primary appendages copiously several times branched, the branches or branchlets commonly more or less marked by basal blackish suffusions, divaricate, slender, tapering, flexuous. On *Chlaenius* sp., Sandakan, Borneo; British Museum, No. 664. On *Chlaenius*? sp., Victoria, Australia; Hope Collection, No. 339. On *Notonomus viridescens* Chaud.? New Zealand; Paris Museum, No. 159. On *Bembus gigas* Bates, Japan; Paris Museum, No. 133. On *Rhembus laevis* Lesne, Java; Paris Museum, No. 109.

Laboulbenia sphyriopsis nov. sp.

Perithecium free, projecting at right angles to the axis of the receptacle or recurved, opaque, blackish brown, slightly asymmetrically inflated below, the tip not distinguished, very broad, truncate or bluntly rounded, concolorous. Receptacle relatively slender, hyaline, cells I and II relatively very large, the rest small; cell I shorter, often tinged with brown;

cells II and III edged with blackish brown externally; cell IV wholly blackish brown; cell V hyaline or partly suffused, the insertion-cell thick. Basal cell of the outer appendage more or less suffused, giving rise to an outer and an inner branch; the basal cell of the former giving rise to an outer, shorter, and an inner branchlet; the inner branch simple: basal cell of the inner appendage bearing a simple branch, distally furcate above its basal cell; the branchlets both fertile, short, with a single terminal antheridium; or one of them sterile and similar to the outer appendage, short, stout, nearly straight, stiff, opaque, hyaline-tipped: the antheridia relatively large, solitary; the broad neck bent abruptly at right angles. Perithecia 90–110 × 40–48 μ. Receptacle 220–250 μ. Appendages 150–185 μ.

On *Metronemus caliginosus* Blk., Oahu, Honolulu; No. 1261 and 1262. Perkins Collection, Hawaiian Carabidae. Right inferior surface of prothorax.

Laboulbenia Stomonaxi nov. sp.

Perithecium hyaline, becoming tinged with brown, less than one half free; short, the outer margin nearly straight, bending rather abruptly inward at the tip; the inner margin converging to the apex from its point of union with cell V; the tip rather abruptly distinguished, broad; the apex nearly flat, the lips hardly prominent. Receptacle yellowish or hyaline, with faint brownish shades; the basal cell usually bent, the subbasal with deeper brown suffusions; cell III more or less deeply suffused with brown, its thick outer wall opaque or nearly so; cells III and IV subequal, several times longer than broad; cell V long-triangular. Insertion-cell thick, black, contrasting, wholly free, separated from the perithecium by nearly the whole upper margin of cell V. Outer appendage curved strongly outward, hyaline on its inner side, deeply suffused on the outer concave side, the suffusion continuous with the insertion-cell; consisting of a small number of cells, the basal relatively long, the rest producing suberect hyaline branchlets distally on the upper side: basal cell of the inner appendage smaller, the subbasal cell usually bearing two branchlets (the appendages broken in the types). Spores 50 × 5 μ. Perithecia 65 × 25 μ. Receptacle 100–110 μ. Appendages 50–75 μ approximately. Total length to tip of perithecium 130–140.

On the margin of the left elytron of *Stomonaxus* sp., Java; Paris Museum, No. 93.

Laboulbenia Texana Thaxter.

An examination of further material from tropical or subtropical species of *Brachinus* seems to indicate that several forms, two of which have already been described as species, are better associated as varieties of this remarkable type. The simplest of these is that I have formerly described as *L. tibialis*, while *L. rostellata* is perhaps the most peculiar. The varieties may be enumerated as follows:

Var. Tibialis. On *Brachinus* sp. from Eustis, Florida.

Var. Rostellata. On the same host and from the same locality.

Var. **incurvata** nov. var. Corresponding closely to the type in the form and coloration of the receptacle. The outer appendage nearly straight, divergent, hardly incurved, becoming more or less brownish, relatively somewhat longer and more tapering than in the type, the subbasal cell producing from its left side a short well-developed five- to six-celled branch, recurved, and bearing branchlets of the characteristic type from its convex side; the second cell producing on its concave side a two-celled branchlet, the lower cell of which bears one and the distal two of the characteristic branchlets. The inner appendage closely resembling that of the type, hyaline, incurved, its third cell producing a well-developed similar branchlet from its concave side. Perithecium as in the type, but the tip quite different, narrow, bent abruptly inward at right angles, the lips compressed. On *Brachinus geniculatus* Dej., Montevideo, Uruguay; Berlin Museum, No. 992.

Var. **pendula** nov. var. Longer and more slender than the type; cell V not greatly broadened, so that the perithecium and appendage diverge but slightly. The outer appendage nearly erect, brown, relatively very long, tapering; one or sometimes more than one of the three lower cells producing externally or laterally well-developed branches of the characteristic type, which are long, slender and more or less pendulous. The inner appendage recurved, more or less pendulous, relatively slender and similar to a well-developed branch which arises on its inner side from the third cell above its base. Perithecium nearly erect, the tip well distinguished, bent slightly inward; the lips somewhat spreading. On *Brachinus geniculatus* Dej., Montevideo, Uruguay; Berlin Museum, No. 992. On the inferior surface of the prothorax. A form somewhat similar also occurs on *B. lateralis* Dej. from Oaxaca, Mexico (Brit. Mus., No. 721); a single specimen only having been obtained it is impossible to say how constant its differences may prove.

COREOMYCES nov. gen.

Mature individual consisting of a single series of superposed cells terminated by a single perithecium. Receptacle attached by a more or less rhizoid-like foot and consisting of three superposed cells, the upper of which becomes divided distally by successive transverse septa; these divisions resulting in a series of superposed cells, from each of which arises, on one side, a single branched appendage; the members of the series thus resulting being superposed in a single vertical row. Perithecium consisting of an undifferentiated stalk-cell immediately above the appendiculate cells, which is followed directly by the asciger-ous cavity, the septa which separate the basal and wall-cells being obliterated in mature individuals.

The antheridia of this anomalous genus have not been definitely distinguished, but appear to be similar to those of Ceratomyces, to which it otherwise does not appear to be nearly related. The development of the perithecium, in so far as it is shown by the material available, seems distinctly unlike that of any other genus.

Coreomyces Corisae nov. sp.

Curved or straight, pale dull brownish, nearly transparent. Cells of the receptacle distinguished by more or less distinct constrictions, the three lower somewhat variable in length, the basal smaller, usually tapering somewhat to the foot; the subbasal larger than either of the others, more or less inflated, often as broad as the perithecium; the upper cell somewhat narrower, followed by the two to four, usually flattened, appendiculate cells, which are successively longer, though usually slightly narrow from below upward, the uppermost becoming about half as long as broad. The appendages long slender hyaline, sparingly branched, slightly divergent; usually extending upward to, or considerably beyond, the tip of the perithecium. Stalk-cell of the peri-thecium not differentiated from the cells below it, large, as broad as the body of the perithecium above it, cylindrical or slightly inflated, about as long as broad or slightly longer: body of the perithecium usually straight, somewhat darker dull brown especially where it tapers rather gradually to the small tip which becomes distinctly symmetrically four-papillate, and is usually more or less conspicuously bent to one side. Spores 85 × 6 μ. Perithecia 100–110 × 25–35 μ, the stalk-cell 30–33 × 32–35 μ. Receptacle, exclusive of the appendiculate cells,

75–100 μ. Appendages 200–250 μ. Total length to tip of perithecium 275–290 μ.

On inferior surface of abdomen of *Corisa Kennicottii* Uhler, Arlington, Mass. On *Corisa* sp., Iowa. This interesting form, which is the only member of the group occurring on an Hemipterous insect, was discovered by Mr. Charles Bullard, who has also found on a different host a somewhat larger form that may prove to be distinct.